Classifi-cation	FRENIC5000G9S/P9S		FRENIC-MEGA	
	Symbols	Name	Symbols	Name
Transistor output	Y1	Transistor output 1	Y1	Transistor output 1
	Y2	Transistor output 2	Y2	Transistor output 2
	Y3	Transistor output 3	Y3	Transistor output 3
	Y4	Transistor output 4	Y4	Transistor output 4
	Y5	Transistor output 5	Y5A, Y5C	General purpose relay output
	CME	Transistor output common	CMY	Transistor output common
	(RUN)	Inverter running	***RUN***	Inverter running
	(FAR)	Frequency (speed) arrival signal	***FAR***	Frequency (speed) arrival signal
	(FDT)	Frequency (speed) detected	***FDT***	Frequency (speed) detected
	(LU)	Undervoltage detected (Inverter stopped)	***LU***	Undervoltage detected (Inverter stopped)
	(TL)	Torque limiting	***IOL***	Inverter output limiting
	(RES)	Auto-restarting after momentary power failure	***IPF***	Auto-restarting after momentary power failure
	(OL)	Motor overload early warning	***OL***	Motor overload early warning
	(KP)	Keypad operation enabled	***KP***	Keypad operation enabled
	(STP)	Inverter stopped	***RUN***	Inverter running (negative logic setting)
	(TU)	Time-up signal for pattern operation	—	
	(TO)	Cycle completion signal for pattern operation	—	
	(STG1)	Pattern operation stage No. indication 1	—	
	(STG2)	Pattern operation stage No. indication 2	—	
	(STG4)	Pattern operation stage No. indication 4	—	
	(AL1)	Alarm indication 1	—	
	(AL2)	Alarm indication 2	—	
	(AL4)	Alarm indication 4	—	
	(AL8)	Alarm indication 8	—	
	(TRY)	Auto-resetting	***TRY***	Auto-resetting
Relay output	30A, 30B, 30C	Alarm relay output (for any error)	30A, 30B, 30C	Alarm relay output (for any error)
	AX1, AX2	Power supply side contactor open command (30 kW or above)	(Y5A, Y5C) ***AX***	Select ***AX*** terminal function (For MC on primary side)

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FRENIC5000G11S/P11S vs. FRENIC-MEGA

Classification	FRENIC5000G11S/P11S		FRENIC-MEGA	
	Symbols	Name	Symbols	Name
Main circuit	L1/R, L2/S, L3/T	Main circuit power terminal	L1/R, L2/S, L3/T	Main circuit power inputs
	R0, T0	Auxiliary control-power input terminal	R0, T0	Auxiliary power input for the control circuit
	U, V, W	Inverter output terminal	U, V, W	Inverter outputs
	P1, P(+)	DC reactor connecting terminal	P1, P(+)	DC reactor connection
	P(+), N(-)	DC link circuit terminal	P(+), N(-)	DC link bus
	P(+), DB	External braking resistor connecting terminal (Up to 22 kW)	P(+), DB	Braking resistor
	⏚G	Inverter ground terminal	⏚G	Grounding for inverter
Analog input	13	Potentiometer power supply	13	Power supply for the potentiometer
	12	Voltage input	12	Analog setting voltage input
	C1	Current input	C1	Analog setting current input
	11	Analog input common	11 (2 terminals)	Analog common
Digital input	FWD	Forward operation/stop command	FWD	Run forward command
	REV	Reverse operation/stop command	REV	Run reverse command
	X1	Digital input 1	X1	Digital input 1
	X2	Digital input 2	X2	Digital input 2
	X3	Digital input 3	X3	Digital input 3
	X4	Digital input 4	X4	Digital input 4
	X5	Digital input 5	X5	Digital input 5
	X6	Digital input 6	X6	Digital input 6
	X7	Digital input 7	X7	Digital input 7
	X8	Digital input 8	X8	Digital input 8
	X9	Digital input 9	X9	Digital input 9
	CM	Common terminal	CM (2 terminals)	Digital input common
	PLC	PLC signal power	PLC	PLC signal power
	(SS1)	Multistep frequency selection	***SS1***	Select multi-frequency
	(SS2)		***SS2***	
	(SS4)		***SS4***	
	(SS8)		***SS8***	
	(RT1)	Acceleration and deceleration time selection (2 steps)	***RT1***	Select ACC/DEC time (2 steps)
	(RT2)	Acceleration and deceleration time selection (4 steps)	***RT2***	Select ACC/DEC time (4 steps)
	(HLD)	Self-hold selection	***HLD***	Enable 3-wire operation
	(BX)	Coast-to-stop command	***BX***	Coast to a stop
	(RST)	Alarm reset	***RST***	Reset alarm
	(THR)	External alarm	***THR***	Enable external alarm trip
	(JOG)	Jogging	***JOG***	Ready for jogging
	(Hz2/Hz1)	Frequency setting 2/ frequency setting 1	***Hz2/Hz1***	Select frequency command 2/1
	(Hz1/Hz2)	Frequency setting 2/ frequency setting 1	***Hz2/Hz1***	Select frequency command 2/1 (negative logic setting)
	(M2/M1)	Motor 2/motor 1	***M2***	Select motor 2
	(DCBRK)	DC injection brake command	***DCBRK***	Enable DC braking
	(TL2/TL1)	Torque limit 2/torque limit 1	***TL2/TL1***	Select torque limiter level 2/1
	(SW50)	Switching operation from line to inverter (50 Hz)	***SW50***	Switch to commercial power (50 Hz)
	(SW60)	Switching operation from line to inverter (60 Hz)	***SW60***	Switch to commercial power (60 Hz)

Classifi-cation	FRENIC5000G11S/P11S		FRENIC-MEGA	
	Symbols	Name	Symbols	Name
Digital input	(UP)	UP command	***UP***	UP (Increase output frequency)
	(DOWN)	DOWN command	***DOWN***	DOWN (Decrease output frequency)
	(WE-KP)	Edit permission command (data change permission)	***WE-KP***	Enable data change with keypad
	(Hz/PID)	PID control cancellation	***Hz/PID***	Cancel PID control
	(IVS)	Forward/inverse switching	***IVS***	Switch normal/inverse operation
	(IL)	Interlock	***IL***	Interlock
	(Hz/TRQ)	Torque control cancellation	—	
	(LE)	Link operation selection (Standard: RS-485, Option: BUS)	***LE***	Enable communications link via RS-485 or fieldbus (option)
	(U-DI)	Universal DI	***U-DI***	Universal DI
	(STM)	Start characteristics selection	***STM***	Enable auto search for idling motor speed at starting
	(STOP1)	Forced stop command	***STOP***	Force to stop
	(STOP2)	Forced stop with Deceleration time 4		
	(PG/Hz)	SY-PG enable	***PG/Hz***	Switch speed feedback control
	(ZERO)	Zero speed command with PG option	—	
	(EXITE)	Pre-exciting command with PG option	***EXITE***	Pre-excitation
	(Hz/LSC)	Line speed control cancellation	—	
	(LSC-HID)	Line speed frequency memory	—	
Analog output	FMA	Analog monitor	FMA	Analog monitor
	(11)	(Analog input common)	(11)	(Analog common)
Pulse output	FMP	Pulse rate monitor (Pulse waveform output)	FMP	Pulse monitor
	(CM)	(Common terminal)	(CM)	(Digital common)
Transistor output	Y1	Transistor output 1	Y1	Transistor output 1
	Y2	Transistor output 2	Y2	Transistor output 2
	Y3	Transistor output 3	Y3	Transistor output 3
	Y4	Transistor output 4	Y4	Transistor output 4
	CME	Transistor output common	CMY	Transistor output common
	(RUN)	Inverter running	***RUN***	Inverter running
	(FAR)	Frequency equivalence signal	***FAR***	Frequency (speed) arrival signal
	(FDT)	Frequency level detection	***FDT***	Frequency (speed) detected
	(FDT2)	2nd frequency level detection	***FDT2***	Frequency (speed) detected 2
	(LU)	Undervoltage detection signal	***LU***	Undervoltage detected (Inverter stopped)
	(B/D)	Torque polarity	***B/D***	Torque polarity detected
	(TL)	Torque limiting	***IOL***	Inverter output limiting
	(IPF)	Auto-restarting	***IPF***	Auto-restarting after momentary power failure
	(OL)	Overload early warning	***OL***	Motor overload early warning
	(OL2)	2nd overload early warning	—	
	(KP)	KEYPAD operation mode	***KP***	Keypad operation enabled
	(STP)	Inverter stopping	***RUN***	Inverter running (negative logic setting)
	(RDY)	Ready output	***RDY***	Inverter ready to run
	(SW88)	Line/inverter changeover (for 88)	***SW88***	Switch motor drive source between commercial power and inverter output
	(SW52-2)	Line/inverter changeover (for 52-2)	***SW52-2***	Switch motor drive source between commercial power and inverter output

Classification	FRENIC5000G11S/P11S		FRENIC-MEGA	
	Symbols	Name	Symbols	Name
Transistor output	(SW52-1)	Line/inverter changeover (for 52-1)	***SW52-1***	Switch motor drive source between commercial power and inverter output
	(SWM2)	Motor 1/motor 2	***SWM2***	Motor 2 selected
	(AX)	Terminal AX function	***AX***	Select ***AX*** terminal function (For MC on primary side)
	(TU)	Time-up signal for pattern operation	—	
	(TO)	Cycle completion signal for pattern operation	—	
	(STG1)	Pattern operation stage No. indication 1	—	
	(STG2)	Pattern operation stage No. indication 2	—	
	(STG4)	Pattern operation stage No. indication 4	—	
	(AL1)	Alarm indication 1	—	
	(AL2)	Alarm indication 2	—	
	(AL4)	Alarm indication 4	—	
	(AL8)	Alarm indication 8	—	
	(FAN)	Fan operation signal	***FAN***	Cooling fan in operation
	(TRY)	Auto-resetting	***TRY***	Auto-resetting
	(U-DO)	Universal DO	***U-DO***	Universal DO
	(OH)	Overheat early warning	***OH***	Heat sink overheat early warning
	(SY)	Synchronization completed by synchronous operation card	—	
	(LIFE)	Lifetime alarm	***LIFE***	Lifetime alarm
	(C1OFF)	Terminal [C1] off signal	***C1OFF***	Terminal [C1] wire break
	(DNZS)	Speed existence signal	***DNZS***	Speed valid
	(DSAG)	Speed agreement	***DSAG***	Speed agreement
	(PG-ABN)	PG error signal	***PG-ERR***	PG error detected
	(TL2)	Torque limiting (signal with delay)	—	
Relay output	Y5A, Y5C	Multipurpose-signal relay output	Y5A, Y5C	General purpose relay output
	30A, 30B, 30C	Alarm output for any fault	30A, 30B, 30C	Alarm relay output (for any error)
Communication	DX+, DX-, SD	RS-485 communication input-output	DX+, DX-, SD	RS-485 communications port 2

G.3 Function codes

This section describes the replacement information related to function codes that are required when replacing the conventional inverter series (e.g., FRENIC5000G9S/P9S and FRENIC5000G11S/P11S) with the FRENIC-MEGA series. It also provides the conversion table for the torque boost setting.

[1] FRENIC5000G9S vs. FRENIC-MEGA p. A-36
[2] FRENIC5000P9S vs. FRENIC-MEGA p. A-47
[3] FRENIC5000G11S vs. FRENIC-MEGA p. A-48
[4] FRENIC5000P11S vs. FRENIC-MEGA p. A-66

[1] FRENIC5000G9S vs. FRENIC-MEGA

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
Fundamental functions							
00	Frequency Command	0: ▲ / ▼ keys on keypad	0	F01	Frequency Command 1	0: ▲ / ▼ keys on keypad	0
		1: Voltage input (0 to 10 VDC, Terminals [12] + [V1]), when [V1] is not used.		F01	Frequency Command 1	1: Voltage input to terminal [12] (-10 to +10 VDC)	0
		1: Voltage input (0 to 10 VDC, Terminals [12] + [V1]), when [V1] is used.		F01	Frequency Command 1	1: Voltage input to terminal [12] (-10 to +10 VDC)	0
				E63	Terminal [V2] Extended Function	1: Auxiliary frequency command 1	0
				C45	Analog Input Adjustment for [V2] (Polarity)	0: Bipolar	1
		2: Sum of voltage and current inputs (Terminals [12] + [V1] + [C1]), when [V1] is not used.		F01	Frequency Command 1	3: Sum of voltage and current inputs to terminals [12] and [C1]	0
		2: Sum of voltage and current inputs (Terminals [12] + [V1] + [C1]), when [V1] is used.		F01	Frequency Command 1	3: Sum of voltage and current inputs to terminals [12] and [C1]	0
				E63	Terminal [V2] Extended Function	1: Auxiliary frequency command 1	0
				C45	Analog Input Adjustment for [V2] (Polarity)	0: Bipolar	1
01	Operation Method	0: RUN / STOP keys on keypad	0	F02	Operation Method	0: RUN/STOP keys on keypad (Motor rotational direction specified by terminal command ***FWD***/***REV***)	2
						2: RUN/STOP keys on keypad (forward)	
						3: RUN/STOP keys on keypad (reverse)	
		1: Terminal command ([FWD] or [REV])				1: Terminal command ***FWD*** or ***REV***	
02	Maximum Frequency	G9S: 50 to 400 Hz, P9S: 50 to 120 Hz	60	F03	Maximum Frequency 1	25.0 to 500.0 Hz	60.0
03	Base Frequency 1	G9S: 50 to 400 Hz, P9S: 50 to 120 Hz	50	F04	Base Frequency 1	25.0 to 500.0 Hz	50.0
04	Rated Voltage 1	0: Output a voltage in proportion to input voltage	200 (200 V class series) 400 (400 V class series)	F05	Rated Voltage at Base Frequency 1	0: Output a voltage in proportion to input voltage	200 (200 V class series) 400 (400 V class series)
						80 to 240 V: Output an AVR-controlled voltage (for 200 V class series) 160 to 500 V: Output an AVR-controlled voltage (for 400 V class series)	
	(Maximum Output Voltage 1)	80 to 240 V: (200 V class series), 320 to 480 V: (400 V class series)		F06	Maximum Output Voltage 1	80 to 240 V: Output an AVR-controlled voltage (for 200 V class series) 160 to 500 V: Output an AVR-controlled voltage (for 400 V class series)	200 (200 V class series) 400 (400 V class series)
05	Acceleration Time 1	0.01 to 3600 s	6.0/20.0	F07	Acceleration Time 1	0.00 to 6000 s	6.00/20.00
06	Deceleration Time 1	0.00: Coast-to-stop	6.0/20.0	F08	Deceleration Time 1	0.00	6.00/20.00
		0.01 to 3600 s				0.01 to 6000 s	

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
07	Torque Boost 1	0.0: Auto torque boost 0.1 to 0.9: Variable torque load 1.0 to 1.9: Proportional torque load 2.0 to 20.0: Constant torque load (75 = 0 when the auto-energy saving operation is disabled)		F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	2: Auto torque boost	1
				F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	0: Variable torque load	1
				F09	Torque Boost 1	0.0 to 20.0: *	Depending on inverter capacity
				F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	1: Constant torque load	1
				F09	Torque Boost 1	0.0 to 20.0: *	Depending on inverter capacity
		0.0: Auto torque boost 0.1 to 0.9: Variable torque load 1.0 to 1.9: Proportional torque load 2.0 to 20.0: Constant torque load (75 = 1 when the auto-energy saving operation is enabled)		F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	5: Auto energy saving (Auto torque boost during ACC/DEC)	1
				F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	3: Auto energy saving (Variable torque load during ACC/DEC)	1
				F09	Torque Boost 1	0.0 to 20.0: *	Depending on inverter capacity
				F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	4: Auto energy saving (Constant torque load during ACC/DEC)	1
				F09	Torque Boost 1	0.0 to 20.0: *	Depending on inverter capacity
08	Electronic Thermal Overload Protection for Motor (Mode selection)	0: Disable	1	F11	Electronic Thermal Overload Protection for Motor 1 (Overload detection level)	0.00: Disable	Motor rated current
		1: For a general-purpose motor		F10	Electronic Thermal Overload Protection for Motor 1 (Select motor characteristics)	1: For a general-purpose motor with shaft-driven cooling fan	1
		2: For an inverter-driven motor				2: For an inverter-driven motor, non-ventilated motor, or motor with separately powered cooling fan	
09	(Overload detection level)	20% to 105% of the rated current (allowable continuous drive current) of the motor	100% of motor rated current	F11	Electronic Thermal Overload Protection for Motor 1 (Overload detection level)	0.01 to 2000 1% to 135% of the rated current (allowable continuous drive current) of the motor	Motor rated current
10	Restart Mode after Momentary Power Failure (Mode selection)	0: Disable (Without restart, trip immediately)	3	F14	Restart Mode after Momentary Power Failure (Mode selection)	0: Trip immediately	1
		1: Disable (Without restart, trip after a recovery from power failure)				1: Trip after a recovery from power failure	
		2: Enable (Continue to run, for heavy inertia or general loads)				3: Continue to run, for heavy inertia or general loads	

* For the torque boost settings, refer to the conversion tables on pages A-67 and onwards.

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
10	Restart Mode after Momentary Power Failure (Mode selection)	3: Enable (Restart at the frequency at which the power failure occurred, for general loads) 4: Enable (Restart at the starting frequency, for low inertia load)	3	F14	Restart Mode after Momentary Power Failure (Mode selection)	4: Restart at the frequency at which the power failure occurred, for general loads 5: Restart at the starting frequency	1
11	Frequency Limiter (High)	G9S: 0 to 400 Hz, P9S: 0 to 120 Hz	70	F15	Frequency Limiter (High)	0.0 to 500.0 Hz	70.0
12	(Low)	G9S: 0 to 400 Hz, P9S: 0 to 120 Hz	0	F16	(Low)	0.0 to 500.0 Hz	0.0
13	Bias Frequency	G9S: 0 to 400 Hz, P9S: 0 to 120 Hz	0	F18	Bias (Frequency command 1)	-100.00% to 100.00%	0.00
14	Gain (Frequency command signal)	0.0% to 200.0%	100.0	C32	Analog Input Adjustment for [12] (Gain)	0.00% to 200.00%	100.00
				C37	Analog Input Adjustment for [C1] (Gain)	0.00% to 200.00%	100.00
15	Torque Limiter (Driving)	20 to 180: The torque is limited to the set value (G9S) 999: Torque limiting disabled	G9S: 180/150	F40	Torque Limiter 1-1	-300% to 300% 999 (Disable)	999
16	(Braking)	20 to 180: The torque is limited to the set value (G9S) 999: Torque limiting disabled 0: Automatic deceleration	G9S: 150/100	F41	Torque Limiter 1-2	-300% to 300% 999 (Disable)	999
				H69	Automatic Deceleration (Mode selection)	4: Torque limit control with Force-to-stop disabled	0
17	DC Braking (Braking starting frequency)	0.0 to 60.0 Hz	0.0	F20	DC Braking 1 (Braking starting frequency)	0.0 to 60.0 Hz	0.0
18	(Braking level)	0% to 100%	0	F21	(Braking level)	0% to 100%	0
19	(Braking time)	0.0: Disable 0.1 to 30.0 s	0.0	F22	(Braking time)	0.00 (Disable) 0.01 to 30.00 s	0.00
20	Multi-frequency 1	G9S: 0.00, 0.20 to 400.0 Hz P9S: 0.00, 0.20 to 120.0 Hz	5.0	C05	Multi-frequency 1	0.00 to 500.00 Hz	0.00
21	Multi-frequency 2		10.0	C06	Multi-frequency 2		0.00
22	Multi-frequency 3		20.0	C07	Multi-frequency 3		0.00
23	Multi-frequency 4		30.0	C08	Multi-frequency 4		0.00
24	Multi-frequency 5		40.0	C09	Multi-frequency 5		0.00
25	Multi-frequency 6		50.0	C10	Multi-frequency 6		0.00
26	Multi-frequency 7		60.0	C11	Multi-frequency 7		0.00
27	Electronic Thermal Overload Protection for Braking Resistor	Only for 7.5 kW or below 0: Disable 1: Enable (built-in braking resistor)	1	F50	Electronic Thermal Overload Protection for Braking Resistor (Discharging capability)	OFF (Disable) 0 (Braking resistor built-in type) 1 to 9000 kWs	7.5 kW or below: 0 11 kW or above: OFF

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
28	Slip Compensation Control	-9.9 to -0.1 0.0 0.1 to 5.0 29 = 0 when the Torque Vector Control is disabled.		F42	Drive Control Selection 1	0: V/f control with slip compensation inactive	0
				H28	Droop Control	-9.9 to -0.1	0.0
				F42	Drive Control Selection 1	0: V/f control with slip compensation inactive	0
				F42	Drive Control Selection 1	2: V/f control with slip compensation active	0
				P12	Motor 1 (Rated slip frequency)	0.1 to -5.0	Depending on inverter capacity
		0.0 0.1 to 5.0 29 = 1 when the Torque Vector Control is enabled.		F42	Drive Control Selection 1	1: Dynamic torque vector control	0
				F42	Drive Control Selection 1	1: Dynamic torque vector control	0
				P12	Motor 1 (Rated slip frequency)	0.1 to -5.0	Depending on inverter capacity
29	Torque Vector Control	Refer to 28, Slip Compensation Control.					
30	Number of Poles of Motor	2 to 14 poles	4	P01	Motor 1 (No. of poles)	2 to 22 poles	4

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FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
Input terminal functions							
31	Function Block (32 to 41) Selection	0: Do not display the function codes 32 to 41 1: Display the function codes 32 to 41	0				
32	Terminals [X1] to [X5] Functions	Function code 32 data consists of four digits, each of which is assigned a predetermined function and terminal. When replacing the FRENIC5000G9S with the FRENIC-MEGA, it is necessary to replace data assigned to each of those four digits with the corresponding function code data of the FRENIC-MEGA.					
		Data: 0000 to 2222 Most significant digit = [X1] and [X2] 3rd digit = [X3] 2nd digit = [X4] Least significant digit = [X5]	0000			0 to 76（1000 to 1076） Setting the value of 1000 s in parentheses ( ) shown above assigns a negative logic input to a terminal.	
	Terminals [X1] to [X5] Functions : Most significant digit = [X1], [X2]	0###: Select multi-frequency		E01	Terminal [X1] Function	0: Select multi-frequency (0 to 1 steps)	0
				E02	Terminal [X2] Function	1: Select multi-frequency (0 to 3 steps)	1
		1###: UP/DOWN command		E01	Terminal [X1] Function	17: UP (Increase output frequency)	0
				E02	Terminal [X2] Function	18: DOWN (Decrease output frequency)	1
				F01	Frequency Command 1	7: Terminal command ***UP***/***DOWN*** control	0
				H61	***UP***/***DOWN*** Control (Initial frequency setting)	0: 0.00 Hz	1
		2###: UP/DOWN command		E01	Terminal [X1] Function	17: UP (Increase output frequency)	0
				E02	Terminal [X2] Function	18: DOWN (Decrease output frequency)	1
				F01	Frequency Command 1	7: Terminal command ***UP***/***DOWN*** control	0
				H61	***UP***/***DOWN*** Control (Initial frequency setting)	1: Last ***UP***/***DOWN*** command value on releasing the run command	1
	Terminals [X1] to [X5] Functions : 3rd digit = [X3]	#0##: Select multi-frequency		E03	Terminal [X3] Function	2: Select multi-frequency (0 to 7 steps)	2
		#1##: witch to commercial power (50 Hz)				15: Switch to commercial power (50 Hz)	2
		#2##: witch to commercial power (60 Hz)				16: Switch to commercial power (60 Hz)	2
	Terminals [X1] to [X5] Functions : 2nd digit = [X4]	##0#: Select ACC/DEC time (2 steps)		E04	Terminal [X4] Function	4: Select ACC/DEC time (2 steps)	3
		##1#: Select power input		E04	Terminal [X4] Function	11: Select frequency command 2/1	3
				C30	Frequency Command 2	2: Current input to terminal [C1] (4 to 20 mA DC)	2
		##2#: Enable DC braking		E04	Terminal [X4] Function	13: Enable DC braking	3
	Terminals [X1] to [X5] Functions : Least significant digit = [X5]	###0: Select ACC/DEC time (4 steps)		E05	Terminal [X5] Function	5: Select ACC/DEC time (4 steps)	4
		###1: Select 2nd V/f		E05	Terminal [X5] Function	12: Select motor 2	4
				A42	Motor/Parameter Switching 2	0: Motor (Switch to the 2nd motor)	0
		###2: Enable data change with keypad		E05	Terminal [X5] Function	19: Enable data change with keypad	4
33	Acceleration Time 2	0.01 to 3600 s	10.0/100	E10	Acceleration Time 2	0.00 to 6000 s	6.00/20.00

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
34	Deceleration Time 2	0.00: Coast-to-stop 0.01 to 3600 s	10.0/100	E11	Deceleration Time 2	0.00 0.01 to 6000 s	6.00/20.00
35	Acceleration Time 3	0.01 to 3600 s	15.0/100	E12	Acceleration Time 3	0.00 to 6000 s	6.00/20.00
36	Deceleration Time 3	0.00: Coast-to-stop 0.01 to 3600 s	15.0/100	E13	Deceleration Time 3	0.00 0.01 to 6000 s	6.00/20.00
37	Acceleration Time 4	0.01 to 3600 s	3.0/100	E14	Acceleration Time 4	0.00 to 6000 s	6.00/20.00
38	Deceleration Time 4	0.00: Coast-to-stop 0.01 to 3600 s	3.0/100	E15	Deceleration Time 4	0.00 0.01 to 6000 s	6.00/20.00
2nd V/f							
39	Base Frequency 2	G9S: 50 to 400 Hz, P9S: 50 to 120 Hz	50	A02	Base Frequency 2	25.0 to 500.0 Hz	50.0
40	Rated Voltage 2	0: Output a voltage in proportion to input voltage	200 (200 V class series) 400 (400 V class series)	A03	Rated Voltage at Base Frequency 2	0: Output a voltage in proportion to input voltage 80 to 240: Output an AVR-controlled voltage (for 200 V class series) 160 to 500: Output an AVR-controlled voltage (for 400 V class series)	200 (200 V class series) 400 (400 V class series)
	(Maximum Output Voltage 2)	80 to 240 V: (200 V class series), 320 to 480 V: (400 V class series		A04	Maximum Output Voltage 2	80 to 240: Output an AVR-controlled voltage (for 200 V class series) 160 to 500: Output an AVR-controlled voltage (for 400 V class series)	200 (200 V class series) 400 (400 V class series)
41	Torque Boost 2	0.1 to 0.9: Variable torque load	2.0	A13	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 2	0: Variable torque load	1
				A05	Torque Boost 2	0.0 to 20.0: *	Depending on inverter capacity
		1.0 to 1.9: Proportional torque load					
		2.0 to 20.0: Constant torque load		A13	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 2	1: Constant torque load	1
				A05	Torque Boost 2	0.0 to 20.0: *	Depending on inverter capacity
Terminal [FM] function							
42	Function Block (43 to 51) Selection	0: Do not display the function codes 43 to 51 1: Display the function codes 43 to 51	0				
43	Terminal [FMP] (Pulse rate)	6 to 100	24	F33	Pulse Output [FMP] (Pulse rate)	25 to 6000 p/s	1440
44	(Voltage adjustment)	50 to 120	100	F34	(Gain to output voltage)	0%: Output pulse rate (Fixed at 50% duty) 1 to 300	0
45	Terminal [FMA] (Voltage adjustment)	65 to 200	100	F30	Analog Output [FMA] (Voltage adjustment)	0 to 300	100
46	(Function)	0: Output frequency 1: Output current 2: Output torque 3: Load factor	0	F31	(Function)	0: Output frequency 1 (before slip compensation) 2: Output current 4: Output torque 5: Load factor	0

* For the torque boost settings, refer to the conversion tables on pages A-67 and onwards.

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
Output terminal function							
47	Terminals [Y1] to [Y5] Function	Function code 47 data consists of five digits in hexadecimal, each of which is assigned a predetermined function and one of terminals [Y1] to [Y5], starting from MSD to LSD. When replacing the FRENIC5000G9S with the FRENIC-MEGA, it is necessary to replace data assigned to each of those five digits with the corresponding function code data (E20 to E24) of the FRENIC-MEGA.					
		Data: 00000 to FFFFF	01234			0 to 105 (1000 to 1105) Setting the value of 1000 s in parentheses ( ) shown above assigns a negative logic input to a terminal.	
		Most significant digit = [Y1]		E20	Terminal [Y1] Function		0
		4th digit = [Y2]		E21	Terminal [Y2] Function		1
		3rd digit = [Y3]		E22	Terminal [Y3] Function		2
		2nd digit = [Y4]		E23	Terminal [Y4] Function		7
		Least significant digit = [Y5]		E24	Terminal [Y5A/C] Function		15
		Data that can be assigned to each digit in the FRENIC5000G9S and the corresponding function code data in the FRENIC-MEGA are listed below.					
		0: Inverter running signal				0: Inverter running	
		1: Frequency arrival signal (See function code 48.)				1: Frequency (speed) arrival signal	
		2: Frequency detection signal (See function codes 49 and 50.)				2: Frequency (speed) detected	
		3: Overload early warning (See function code 51.)				7: Motor overload early warning	
		4: Undervoltage detected (Inverter stopped)				3: Undervoltage detected (Inverter stopped)	
		5: Keypad operation enabled				8: Keypad operation enabled	
		6: Torque limiting				5: Inverter output limiting	
		7: Inverter stopped				(1000): Inverter running	
		8: Auto-restarting after momentary power failure				6: Auto-restarting after momentary power failure (Restart timing can be changed.)	
		9: Auto-resetting				26: Auto-resetting	
		A: (Not used.)					
		B: (Not used.)					
		C: When the pattern operation stage changes, outputs a one-shot signal with the pulse of 100 ms.					
		D: When a cycle of pattern operation is completed, outputs a one-shot signal with the pulse of 100 ms.					
		E: Outputs the stage number of the pattern operation with a 3-bit signal by the combination of terminals [Y3] to [Y5].					
		F: Outputs the trip factor with a 4-bit signal by the combination of terminals [Y2] to [Y5].					

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
48	Frequency Arrival (FAR) (Hysteresis width)	0.0 to 10.0 Hz	2.5	E30	Frequency Arrival (Hysteresis width)	0.0 to 10.0 Hz	2.5
49	Frequency Detection (FDT) (Level)	G9S: 0 to 400 Hz, P9S: 0 to 120 Hz	60	E31	Frequency Detection (Level)	0.0 to 500.0 Hz	60.0
50	(Hysteresis width)	0.0 to 30.0 Hz	1.0	E32	(Hysteresis width)	0.0 to 500.0 Hz	1.0
51	Overload Early Warning (Level)	20% to 105% of the inverter rated current	100% of motor rated current	E34	Overload Early Warning/Current Detection (Level)	Current value of 1% to 200% of the inverter rated current	Motor rated current
Frequency control							
52	Function Block (53 to 59) Selection	0: Do not display the function codes 53 to 59 1: Display the function codes 53 to 59	0				
53 to 55	Jump Frequency 1 to 3	G9S: 0 to 400 Hz, P9S: 0 to 120 Hz	0	C01 to C03	Jump Frequency 1 to 3	0.0 to 500.0 Hz	0.0
56	(Hysteresis width)	0 to 30 Hz	3	C04	(Hysteresis width)	0.0 to 30.0 Hz	3.0
57	Starting Frequency (Frequency)	0.2 to 60.0 Hz	0.5	F23	Starting Frequency 1	0.0 to 60.0 Hz	0.5
58	(Holding time)	0.0 to 10.0 s	0.0	F24	(Holding time)	0.00 to 10.00 s	0.00
59	Frequency Command Filter	0.01 to 5.00 s	0.05	C33	Analog Input Adjustment for [12] (Filter time constant)	0.00 to 5.00 s	0.05
				C38	Analog Input Adjustment for [C1] (Filter time constant)	0.00 to 5.00 s	0.05
Display on the LED and LCD							
60	Function Block (61 to 79) Selection	0: Do not display the function codes 61 to 79 1: Display the function codes 61 to 79	0				
61	LED Monitor Switching 1 (Item selection)	0: Output frequency (Hz)	0	E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	
				E48	LED Monitor (Speed monitor item)	0: Output frequency (Before slip compensation)	
		1: Output current (A)		E43	LED Monitor (Item selection)	3: Output current	
		2: Output voltage (command value) (V)		E43	LED Monitor (Item selection)	4: Output voltage	
		3: Synchronous speed (r/min)		E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	
				E48	LED Monitor (Speed monitor item)	3: Motor speed in r/min	
		4: Line speed (m/min)		E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	
				E48	LED Monitor (Speed monitor item)	5: Line speed in m/min	
		5: Load shaft speed (r/min)		E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	
				E48	LED Monitor (Speed monitor item)	4: Load shaft speed in r/min	
		6: Driving torque limit setting value (%)					
		7: Braking torque limit setting value (%)					
		8: Calculated torque (%)		E43	LED Monitor (Item selection)	8: Calculated torque	

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
62	LED Monitor Switching 2 (Display when stopped)	0: Specified value 1: Output value	0	E44	LED Monitor (Display when stopped)	0: Specified value 1: Output value	0
63	Coefficient for Speed Indication (Load speed)	0.01 to 200.00	0.01	E40	PID Display Coefficient A	-999 to 0.00 to 9990	100
				E50	Coefficient for Speed Indication Load shaft speed and line speed	0.01 to 200.00	30.00
64	LCD Monitor (Item selection)	0: Running status, operation guidance 1: Bar graph (Reference frequency/output frequency) 2: Bar graph (Output frequency/output current) 3: Bar graph (Output frequency/output torque)	0	E45	LCD Monitor (Item selection)	0: Running status, rotational direction and operation guide 1: Bar charts for output frequency, current and calculated torque	0
Pattern operation							
65	Pattern Operation (Mode selection)	0: Disable pattern operation. Perform normal operation. 1: Perform a pattern operation cycle, then stop operation. 2: Perform pattern operation repeatedly. 3: Perform a pattern operation cycle, then continue operation with the last frequency set.	0				
66 67 68 69 70 71 72	Timer 1 Timer 2 Timer 3 Timer 4 Timer 5 Timer 6 Timer 7	Timer 0.00 to 6000 s	0.00				
73	Acceleration/Deceleration Pattern (Mode selection)	0: Linear 1: S-curve 2: Curvilinear	0	H07	Acceleration/Deceleration Pattern	0: Linear 1: S-curve (Weak) 2: S-curve (Arbitrary, according to H57 to H60 data) 3: Curvilinear	0

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
Special functions 1							
75	Auto Energy Saving Operation	Refer to 07, Torque Boost 1.					
76	Inhibit Reverse Rotation	0: Disable 1: Enable (Reverse rotation inhibited)	0	H08	Rotational Direction Limitation	0: Disable 1: Enable (Reverse rotation inhibited)	0
77	Data Initialization	0: Disable initialization 1: Initialize all function code data to the factory defaults	0	H03	Data Initialization	0: Disable initialization 1: Initialize all function code data to the factory defaults	0
78	LCD (Japanese/English)	0: Japanese 1: English	0	E46	LCD Monitor (Language selection)	0: Japanese 1: English	0
79	LCD (Contrast control)	0 (Low) to 10 (High)	5	E47	LCD Monitor (Contrast control)	0 (Low) to 10 (High)	5
80	Function Block (81 to 94) Selection	0: Do not display the function codes 81 to 94 1: Display the function codes 81 to 94	0				
81	Motor Sound Adjustment (Carrier frequency) G9 22 kW or below	0: Low carrier frequency (2 kHz) ⋮ ⋮ 10: High carrier frequency (15 kHz) 11: Extremely low carrier frequency (0.7 kHz)	10	F26	Motor Sound (Carrier frequency) 22 kW or below	2 kHz ⋮ 15 kHz (Up to 16 kHz can be specified.) 0.75 kHz	2
	Motor Sound Adjustment (Carrier frequency) G9 30 to 55 kW	0: Low carrier frequency (2 kHz) ⋮ ⋮ 10: High carrier frequency (10 kHz) 11: Extremely low carrier frequency (0.7 kHz)			Motor Sound (Carrier frequency) 30 to 55 kW	2 kHz ⋮ 10 kHz (Up to 16 kHz can be specified.) 0.75 kHz	
	Motor Sound Adjustment (Carrier frequency) G9 75 kW or above	0: Low carrier frequency (2 kHz) ⋮ ⋮ 10: High carrier frequency (6 kHz) 11: Extremely low carrier frequency (0.7 kHz)			Motor Sound (Carrier frequency) 75 kW or below	2 kHz ⋮ 6 kHz (Up to 10 kHz can be specified.) 0.75 kHz	
82	Restart Mode after Momentary Power Failure (Restart time)	0.0 to 0.5 s	0.1	H13	Restart Mode after Momentary Power Failure (Restart time)	0.1 to 10.0 s	Depending on inverter capacity
83	(Frequency fall rate)	0.00: Deceleration time specified 0.01 to 100.00	10.00	H14	(Frequency fall rate)	0.00: Deceleration time selected by F08 0.01 to 100.00	999
84	Auto-reset (Times)	0: Disable 1 to 7: Number of retry times	0	H04	Auto-reset (Times)	0: Disable 1 to 10: Number of retry times	0
85	(Reset interval)	2 to 20 s	5	H05	(Reset interval)	0.5 to 20.0 s	5.0

FRENIC5000G9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
Motor characteristics							
86	Motor 1 (Rated capacity)	0: 1 rank higher capacity than the nominal applied motor 1: Nominal applied motor capacity 2: 1 rank lower capacity than the nominal applied motor 3: 2 ranks lower capacity than the nominal applied motor	1	P02	Motor 1 (Rated capacity)	0.01 to 1000 kW	Depending on inverter capacity
87	Motor 1 (Rated current)	0.00 to 2000 A	Standard rated value	P03	Motor 1 (Rated current)	0.00 to 2000 A	Depending on inverter capacity
88	Motor 1 (No-load current)	0.00 to 2000 A	Standard rated value	P06	Motor 1 (No-load current)	0.00 to 2000 A	Depending on inverter capacity
89	Motor 2 (Rated current)	0.00 to 2000 A	Standard rated value	A17	Motor 2 (Rated current)	0.00 to 2000 A	Depending on inverter capacity
90	Motor 1 (Tuning: %R1, %X)	0: Disable 1: Enable	0	P04	Motor 1 (Auto-tuning)	0: Disable 1: Tune while the motor stops. (%R1, %X and rated slip frequency) 2: Tune while the motor is rotating under V/f control (%R1, %X, rated slip frequency, no-load current, magnetic saturation factors 1 to 5, and magnetic saturation extension factors "a" to "c")	0
91	Motor 1 (%R1)	0.00% to 50.00%	Depending on inverter capacity	P07	Motor 1 (%R1)	0.00% to 50.00%	Depending on inverter capacity
92	Motor 1 (%X)	0.00% to 50.00%	Depending on inverter capacity	P08	Motor 1 (%X)	0.00% to 50.00%	Depending on inverter capacity
Special functions 2							
95	Data Protection	0: Enable data change 1: Enable data protection	0	F00	Data Protection	0: Disable both data protection and digital reference protection 1: Enable data protection and disable digital reference protection	0
The FRENIC5000G9S series of inverters do not support these functions shown at the right. When replacing the FRENIC5000G9S with the FRENIC-MEGA, cancel or disable these function codes in FRENIC-MEGA in order to conform them to the FRENIC5000G9S.				F43	Current Limiter (Mode selection)	0: Disable	2
				H50	Non-linear V/f Pattern 1 (Frequency)	0.0: Cancel (30 kW or above) 0.1 to 500.0 Hz	0.0/5.0
				H51	(Voltage)	0 to 240: Output an AVR-controlled voltage (for 200 V class series) 0 to 500: Output an AVR-controlled voltage	0/20
				H72	Main Power Down Detection (Mode selection)	0: Disable	1

[2] FRENIC5000P9S vs. FRENIC-MEGA

FRENIC5000P9S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
When replacing the FRENIC5000P9S with the FRENIC-MEGA, set the F80 data of the FRENIC-MEGA to "1: LD (Low Duty) mode." The LD-mode inverter brings out the continuous rated current level which enables the inverter to drive a motor with one rank higher capacity, but its overload capability (%) against the continuous current rating level decreases.				F80	Switching between HD and LD drive modes	1: LD (Low Duty) mode * Function code data out of the range in the LD mode are automatically changed to the upper limits in the LD mode.	0
Replacement of function codes for the FRENIC5000P9S is basically equivalent to that for the FRENIC5000G9S given on pages A-36 to A-46, except for the data setting range of following function codes.							
18	DC Braking (Braking level)		0	F21	DC Braking 1 (Braking level)		0
81	Motor Sound Adjustment (Carrier frequency) P9 22 kW or below	0: Low carrier frequency (2 kHz) ⋮ ⋮ 10: High carrier frequency (15 kHz) 11: Extremely low carrier frequency (0.7 kHz)	10	F26	Motor Sound (Carrier frequency)	2 kHz ⋮ 15 kHz (Up to 16 kHz can be specified.) 0.75 kHz	2
	Motor Sound Adjustment (Carrier frequency) P9 30 to 75 kW	0: Low carrier frequency (2 kHz) ⋮ ⋮ 10: High carrier frequency (6 kHz) 11: Extremely low carrier frequency (0.7 kHz)			Motor Sound (Carrier frequency)	2 kHz ⋮ 6 kHz (Up to 10 kHz can be specified for inverters with a capacity of 5.5 kW or below) 0.75 kHz	
	Motor Sound Adjustment (Carrier frequency) P9 90 kW or above	0: Low carrier frequency (2 kHz) ⋮ ⋮ 10: High carrier frequency (4 kHz) 11: Extremely low carrier frequency (0.7 kHz)			Motor Sound (Carrier frequency)	2 kHz ⋮ 4 kHz (Up to 6 kHz can be specified.) 0.75 kHz	

[3] FRENIC5000G11S vs. FRENIC-MEGA

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
F00	Data Protection	0: The data can be changed	0	F00	Data Protection	0: Disable both data protection and digital reference protection	0
		1: The data cannot be changed				1: Enable data protection and disable digital reference protection	
F01	Frequency Command 1	0: Setting by keypad panel operation (▲ ▼ key)	0	F01	Frequency Command 1	0: ▲ / ▼ keys on keypad	0
		1: Setting by voltage input (terminal [12]) (0 to +10 V)				1: Voltage input to terminal [12] (-10 to +10 VDC)	
		2: Setting by current input (terminal [C1]) (4 to 20 mA)				2: Current input to terminal [C1] (4 to 20 mA DC)	
		3: Setting by voltage input + current input (terminal [12] + terminal [C1])				3: Sum of voltage and current inputs to terminals [12] and [C1]	
		4: Reversible operation with polarity (terminal [12]) (-10 to +10 V)		F01	Frequency Command 1	1: Voltage input to terminal [12] (-10 to +10 VDC)	0
				C35	Analog Input Adjustment for [12] (Polarity)	0: Bipolar	1
		5: Reversible operation with polarity (terminal [12] + AIO frequency auxiliary input)		F01	Frequency Command 1	1: Voltage input to terminal [12] (-10 to +10 VDC)	0
				E63	Terminal [V2] Extended Function	1: Auxiliary frequency command 1	0
				C35	Analog Input Adjustment for [12] (Polarity)	0: Bipolar	1
		6: Inverse mode operation (terminal [12]) (+10 V to 0)		F01	Frequency Command 1	1: Voltage input to terminal [12] (-10 to +10 VDC)	0
				C53	Selection of Normal/Inverse Operation (Frequency command 1)	1: Inverse operation	0
		7: Inverse mode operation (terminal [C1]) (20 to 4 mA)		F01	Frequency Command 1	2: Current input to terminal [C1] (4 to 20 mA DC)	0
				C53	Selection of Normal/Inverse Operation (Frequency command 1)	1: Inverse operation	0
		8: Setting by UP/DOWN control mode 1 (initial value = 0)		F01	Frequency Command 1	7: Terminal command ***UP/DOWN*** control	0
				H61	***UP/DOWN*** Control (Initial frequency setting)	0: 0.00 Hz	1
		9: Setting by UP/DOWN control mode 2 (initial value = last final value)		F01	Frequency Command 1	7: Terminal command ***UP/DOWN*** control	0
				H61	***UP/DOWN*** Control (Initial frequency setting)	1: Last ***UP/DOWN*** command value on releasing the run command	1
		10: Setting by pattern operation					
		11: Setting by digital input or pulse train input		F01	Frequency Command 1	11: Digital input interface card (option)	0
						12: Pulse train input * Max.: 100 kHz/Maximum frequency	

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
F02	Operation Method	0: Keypad operation (FWD, REV, STOP keys)	0	F02	Operation Method	0: RUN/STOP keys on keypad (Motor rotational direction specified by terminal command ***FWD***/***REV***)	2
						2: RUN/STOP keys on keypad (forward)	
						3: RUN/STOP keys on keypad (reverse)	
		1: Operation by external input (terminals [FWD] and [REV])				1: Terminal command ***FWD*** or ***REV***	
F03	Maximum Frequency 1	50 to 400 Hz	60	F03	Maximum Frequency 1	25.0 to 500.0 Hz	60.0
F04	Base Frequency 1	25 to 400 Hz	50	F04	Base Frequency 1	25.0 to 500.0 Hz	50.0
F05	Rated Voltage 1 (at Base frequency 1)	0: (Output voltage proportional to source voltage) 80 to 240 V: (200 V class) 320 to 480 V: (400 V class)	200 (200 V class) 400 (400 V class)	F05	Rated Voltage at Base Frequency 1	0: Output a voltage in proportion to input voltage 80 to 240 V: Output an AVR-controlled voltage (for 200 V class series) 160 to 500 V: Output an AVR-controlled voltage (for 400 V class series)	200 (200 V class series) 400 (400 V class series)
F06	Maximum Voltage 1 (at Maximum frequency 1)	80 to 240 V: (200 V class) 320 to 480 V: (400 V class)	200 (200 V class) 400 (400 V class)	F06	Maximum Output Voltage 1	80 to 240 V: Output an AVR-controlled voltage (for 200 V class series) 160 to 500 V: Output an AVR-controlled voltage (for 400 V class series)	200 (200 V class series) 400 (400 V class series)
F07	Acceleration Time 1	0.01 to 3600 s	6.0/20.0	F07	Acceleration Time 1	0.00 to 6000 s	6.00/20.00
F08	Deceleration Time 1	0.01 to 3600 s	6.0/20.0	F08	Deceleration Time 1	0.00 to 6000 s	6.00/20.00
F09	Torque Boost 1	0.0: Automatic torque boost 0.1 to 0.9: Square law reduction torque 1.0 to 1.9: Proportional torque 2.0 to 20.0: Constant torque (H10 = 0 when the auto-energy saving operation is disabled)	G11S: 0.0	F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	2: Auto torque boost	1
				F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	0: Variable torque load	1
				F09	Torque Boost 1	0.0 to 20.0: *	Depending on inverter capacity
				F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	1: Constant torque load	1
				F09	Torque Boost 1	0.0 to 20.0: *	Depending on inverter capacity
		0.0: Automatic torque boost 0.1 to 0.9: Square law reduction torque 1.0 to 1.9: Proportional torque 2.0 to 20.0: Constant torque (H10 = 1 when the auto-energy saving operation is enabled)		F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	5: Auto energy saving (Auto torque boost during ACC/DEC)	1
				F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	3: Auto energy saving (Variable torque load during ACC/DEC)	1
				F09	Torque Boost 1	0.0 to 20.0: *	Depending on inverter capacity
				F37	Load Selection/Auto Torque Boost/ Auto Energy Saving Operation 1	4: Auto energy saving (Constant torque load during ACC/DEC)	1
				F09	Torque Boost 1	0.0 to 20.0: *	Depending on inverter capacity

* For the torque boost settings, refer to the conversion tables on pages A-67 and onwards.

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
F10	Electronic Thermal 1 (Select)	0: Inactive	1	F11	Electronic Thermal Overload Protection for Motor 1 (Overload detection level)	0.00: Disable	Motor rated current
		1: Active (for general-purpose motor)		F10	(Select motor characteristics)	1: For a general-purpose motor with shaft-driven cooling fan	1
		2: Active (for inverter motor)				2: For an inverter-driven motor, non-ventilated motor, or motor with separately powered cooling fan	
F11	(Level)	20% to 135% of the rated current of the inverter	Motor rated current	F11	(Overload detection level)	1% to 135% of the rated current (allowable continuous drive current) of the motor	Motor rated current
F12	(Thermal time constant)	0.5 to 75.0 min	5.0/10.0	F12	(Thermal time constant)	0.5 to 75.0 min	5.0/10.0
F13	Electronic Thermal Overload Relay (for braking resistor)	0 to 2 (Up to 7.5 kW) 0: Inactive	1	F50	Electronic Thermal Overload Protection for Braking Resistor (Discharging capability)	0 (Braking resistor built-in type)	7.5 kW or below: 0 11 kW or above: OFF
		1: Active (built-in braking resistor)				1 to 9000	
		2: Active (DB***-2C/4C, external braking resistor)				OFF (Disable)	
		0 (11 kW and above) 0: Inactive	0	F51	(Allowable average loss)	0.001 to 99.99 kW	0.001
				F52	(Resistance)	0.01 to 999Ω	0.01
F14	Restart Mode after Momentary Power Failure (Mode select)	0: Inactive (Immediate inverter trip)	1	F14	Restart Mode after Momentary Power Failure (Mode selection)	0: Trip immediately	1
		1: Inactive (inverter trip at recovery)				1: Trip after a recovery from power failure	
		2: Inactive (inverter trip after deceleration to a stop at power failure)				2: Trip after decelerate-to-stop	
		3: Active (operation continued, for high-inertia loads)				3: Continue to run, for heavy inertia or general loads	
		4: Active (restart with the frequency at power failure)				4: Restart at the frequency at which the power failure occurred, for general loads	
		5: Active (restart with the start frequency, for low-inertia loads)				5: Restart at the starting frequency	
F15	Frequency Limiter (High)	0 to 400 Hz	70	F15	Frequency Limiter (High)	0.0 to 500.0 Hz	70.0
F16	(Low)	0 to 400 Hz	0	F16	(Low)	0.0 to 500.0 Hz	0.0
F17	Gain (for Freq set signal)	0.0% to 200.0%	100.0	C32	Analog Input Adjustment for [12] (Gain)	0.00% to 200.00%	100.00
				C37	Analog Input Adjustment for [C1] (Gain)	0.00% to 200.00%	100.00
F18	Bias Frequency	-400.0 to 400.0 Hz	0.0	F18	Bias (Frequency command 1)	-100.00% to 100.00%	0.00
F20	DC Brake (Starting freq.)	0.0 to 60.0 Hz	0.0	F20	DC Braking 1 (Braking starting frequency)	0.0 to 60.0 Hz	0.0
F21	(Braking level)	0% to 100%	0	F21	(Braking level)	0% to 100%	0
F22	(Braking time)	0.0 to 30.0 s	0.0	F22	(Braking time)	0.01 to 30.00 s	0.00
F23	Starting Frequency (Freq.)	0.1 to 60.0 Hz	0.5	F23	Starting Frequency 1	0.0 to 60.0 Hz	0.5
F24	(Holding time)	0.0 to 10.0 s	0.0	F24	(Holding time)	0.00 to 10.00 s	0.00

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Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
F25	Stop Frequency	0.1 to 60.0 Hz	0.2	F25	Stop Frequency	0.0 to 60.0 Hz	0.2
F26	Motor Sound (Carrier frequency)	0.75 to 15 kHz: 55 kW or below	2	F26	Motor Sound (Carrier frequency)	0.75 to 15 kHz: 55 kW or below (Up to 16 kHz can be specified.)	2
		0.75 to 10 kHz: 75 kW or above				0.75 to 10 kHz: 75 kW or above	
F27	(Sound tone)	0 to 3	0	F27	(Tone)	0 to 3	0
F30	FMA (Voltage adjust)	0% to 200%	100	F30	Analog Output [FMA] (Voltage adjustment)	0% to 300%	100
F31	(Function)	0: Output frequency 1 (before slip compensation)	0	F31	(Function)	0: Output frequency 1 (before slip compensation)	0
		1: Output frequency 2 (after slip compensation)				1: Output frequency 2 (after slip compensation)	
		2: Output current				2: Output current	
		3: Output voltage				3: Output voltage	
		4: Output torque				4: Output torque	
		5: Load rate				5: Load factor	
		6: Power consumption				6: Input power	
		7: PID feedback amount				7: PID feedback amount	
		8: PG feedback amount				8: PG feedback value	
		9: DC link circuit voltage				9: DC link bus voltage	
		10: Universal AO (Outputs arbitrary value via communications link)				10: Universal AO	
F33	FMP (Pulse rate)	300 to 6000 p/s	1440	F33	Pulse Output [FMP] (Pulse rate)	25 to 6000 p/s	1440
F34	(Voltage adjust)	0: Pulse frequency output (Fixed at 50% duty)	0	F34	(Gain to output voltage)	0%: Output pulse rate (Fixed at 50% duty)	0
		1 to 200				1 to 300	
F35	(Function)	0: Output frequency 1 (before slip compensation)	0	F35	(Function)	0: Output frequency 1 (before slip compensation)	0
		1: Output frequency 2 (after slip compensation)				1: Output frequency 2 (after slip compensation)	
		2: Output current				2: Output current	
		3: Output voltage				3: Output voltage	
		4: Output torque				4: Output torque	
		5: Load rate				5: Load factor	
		6: Power consumption				6: Input power	
		7: PID feedback amount				7: PID feedback amount	
		8: PG feedback amount				8: PG feedback value	
		9: DC link circuit voltage				9: DC link bus voltage	
		10: Universal AO (Outputs arbitrary value via communications link)				10: Universal AO	

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Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
F36	30RY Operation Mode	0: At normal [30A] - [30C]: OFF At abnormal [30A] - [30C]:ON	0	E27	Terminal [30A/B/C] Function (Relay output)	99: Alarm output (for any alarm)… In normal state, [30A] - [30C]: OFF In abnormal state, [30A] -[30C]: ON	99
		1: At normal [30A] - [30C]: ON At abnormal [30A] - [30C]: OFF				1099: Alarm output (for any alarm)… In normal state, [30A] - [30C]: ON In abnormal state, [30A] -[30C]: OFF	
F40	Torque Limiter 1 (Driving)	20 to 200: The torque is limited to the set value	999	F40	Torque Limiter 1-1	-300 to 300: Torque limiter level	999
		999: Torque limiting inactive				999: Disable	
F41	(Braking)	20 to 200: The torque is limited to the set value	999	F41	Torque Limiter 1-2	-300 to 300: Torque limiter level	999
		999: Torque limiting inactive				999: Disable	
F41	Torque Limiter 1 (Braking)	0: Prevent 0V trip due to power regeneration effect automatically	999	H69	Automatic Deceleration (Mode selection)	2: Torque limit control with Force-to-stop if actual deceleration time exceeds three times the specified one	0
U60	Automatic Deceleration during Deceleration	0: Torque limiting (for high response)	0				
F41	Torque Limiter 1 (Braking)	0: Prevent 0V trip due to power regeneration effect automatically	999	H69	Automatic Deceleration (Mode selection)	3: DC link bus voltage control with Force-to-stop if actual deceleration time exceeds three times the specified one	0
U60	Automatic Deceleration during Deceleration	1: Prevent 0V trip (only during deceleration, for high inertia)	0				
F42	Torque Vector Control 1	0: Inactive	0	F42	Drive Control Selection 1	0: V/f control with slip compensation inactive	0
		1: Active				1: Dynamic torque vector control	
E01	X1 Terminal Function (Function selection)	0 to 35	0	E01	Terminal [X1] Function	0 to 76 (1000 to 1076) Setting the value of 1000 s in parentheses ( ) shown above assigns a negative logic input to a terminal.	0
E02	X2 Terminal Function	0: Multistep frequency selection (1 to 15 steps)	1	E02	Terminal [X2] Function	0: Select multi-frequency (0 to 1 steps)	1
E03	X3 Terminal Function	1: Multistep frequency selection (1 to 15 steps)	2	E03	Terminal [X3] Function	1: Select multi-frequency (0 to 3 steps)	2
E04	X4 Terminal Function	2: Multistep frequency selection (1 to 15 steps)	3	E04	Terminal [X4] Function	2: Select multi-frequency (0 to 7 steps)	3
E05	X5 Terminal Function	3: Multistep frequency selection (1 to 15 steps)	4	E05	Terminal [X5] Function	3: Select multi-frequency (0 to 15 steps)	4
E06	X6 Terminal Function	4: Acceleration and deceleration time selection (3 steps)	5	E06	Terminal [X6] Function	4: Select ACC/DEC time (2 steps)	5
E07	X7 Terminal Function	5: Acceleration and deceleration time selection (3 steps)	6	E07	Terminal [X7] Function	5: Select ACC/DEC time (4 steps)	6
E08	X8 Terminal Function	6: Self-hold selection	7	E08	Terminal [X8] Function	6: Enable 3-wire operation	7
E09	X9 Terminal Function	7: Coast-to-stop command	8	E09	Terminal [X9] Function	7: Coast to a stop	8
		8: Alarm reset				8: Reset alarm	
		9: External alarm				9: Enable external alarm trip	
		10: Jogging				10: Ready for jogging	
		11: Frequency setting 2/frequency setting 1				11: Select frequency command 2/1	
		12: Motor 2/motor 1				12: Select motor 2	
		13: DC injection brake command				13: Enable DC braking	

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Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
E01 to E09	X1 to X9 Terminal Function (Function selection)	14: Torque limit 2/torque limit 1		E01 to E09	Terminal [X1] to [X9] Function	14: Select torque limiter level 2/1	
		15: Switching operation from line to inverter (50 Hz)				15: Switch to commercial power (50 Hz)	
		16: Switching operation from line to inverter (60 Hz)				16: Switch to commercial power (60 Hz)	
		17: UP command				17: UP (Increase output frequency)	
		18: DOWN command				18: DOWN (Decrease output frequency)	
		19: Edit permission command (data change permission)				19: Enable data change with keypad	
		20: PID control cancellation				20: Cancel PID control	
		21: Forward/inverse switching				21: Switch normal/inverse operation	
		22: Interlock (52-2)				22: Interlock	
		23: Torque control cancellation					
		24: Link operation selection (Standard: RS-485, Option: BUS)				24: Enable communications link via RS-485 or fieldbus (option)	
		25: Universal DI				25: Universal DI	
		26: Start characteristics selection				26: Enable auto search for idling motor speed at starting	
		27: PG-SY enable (option)					
		28: Not used.					
		29: Zero speed command with PG option					
		32: Pre-exciting command with PG option				32: Pre-excitation	
		33: Line speed control cancellation (option)					
		34: Line speed frequency memory (option)					
		35: Frequency setting 2/frequency setting 1				(1011): Select frequency command 2/1	
E01 to E09	X1 to X9 Terminal Function	30: Forced stop command (within the time currently specified)		E01 to E09	Terminal [X1] to [X9] Function	30: Force to stop	0
				H56	Deceleration Time for Forced Stop	0.00 to 6000 s	6.00/20.00
E01 to E09	X1 to X9 Terminal Function	31: Forced stop with Deceleration time 4 (within the time specified by E15, Deceleration Time 4.)	0	E01 to E09	Terminal [X1] to [X9] Function	30: Force to stop	0
E15	Deceleration Time 4	0.01 to 3600 s	6.0/20.0	H56	Deceleration Time for Forced Stop	0.00 to 6000 s	6.00/20.00
E10	Acceleration Time 2	0.01 to 3600 s	6.0/20.0	E10	Acceleration Time 2	0.00 to 6000 s	6.00/20.00
E11	Deceleration Time 2	0.01 to 3600 s	6.0/20.0	E11	Deceleration Time 2	0.00 to 6000 s	6.00/20.00
E12	Acceleration Time 3	0.01 to 3600 s	6.0/20.0	E12	Acceleration Time 3	0.00 to 6000 s	6.00/20.00
E13	Deceleration Time 3	0.01 to 3600 s	6.0/20.0	E13	Deceleration Time 3	0.00 to 6000 s	6.00/20.00
E14	Acceleration Time 4	0.01 to 3600 s	6.0/20.0	E14	Acceleration Time 4	0.00 to 6000 s	6.00/20.00
E15	Deceleration Time 4	0.01 to 3600 s	6.0/20.0	E15	Deceleration Time 4	0.00 to 6000 s	6.00/20.00

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Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
E16	Torque Limiter 2 (Driving)	20 to 200: The torque is limited to the set value	999	E16	Torque Limiter 2-1	-300 to 300: Torque limiter level	999
		999: Torque limiting inactive				999: Disable	
E17	(Braking)	20 to 200: The torque is limited to the set value	999	E17	Torque Limiter 2-2	300 to 300: Torque limiter level	999
		999: Torque limiting inactive				999: Disable	
E17	Torque Limiter 2 (Braking)	0: Prevent 0V trip due to power regeneration effect automatically	999	H69	Automatic Deceleration (Mode selection)	2: Torque limit control with Force-to-stop if actual deceleration time exceeds three times the specified one	0
U60	Automatic Deceleration during Deceleration	0: Torque limiting (for high response)	0				
E17	Torque Limiter 2 (Braking)	0: Prevent 0V trip due to power regeneration effect automatically	999	H69	Automatic Deceleration (Mode selection)	3: DC link bus voltage control with Force-to-stop if actual deceleration time exceeds three times the specified one	0
U60	Automatic Deceleration during Deceleration	1: Prevent 0V trip (only during deceleration, for high inertia)	0				
E20	Y1 Terminal Function (Function selection)	0 to 37	0	E20	Terminal [Y1] Function	0 to 105 (1000 to 1105) Setting the value of 1000 s in parentheses ( ) shown above assigns a negative logic input to a terminal.	0
E21	Y2 Terminal Function	0: Inverter running	1	E21	Terminal [Y2] Function	0: Inverter running	1
E22	Y3 Terminal Function	1: Frequency equivalence signal	2	E22	Terminal [Y3] Function	1: Frequency (speed) arrival signal	2
E23	Y4 Terminal Function	2: Frequency level detection	7	E23	Terminal [Y4] Function	2: Frequency (speed) detected	7
E24	Y5A and Y5C Terminal Function (Relay output)	3: Undervoltage detection signal	15	E24	Terminal [Y5A/C] Function	3: Undervoltage detected (Inverter stopped)	15
		4: Torque polarity (braking/driving)				4: Torque polarity detected	
		5: Torque limiting				5: Inverter output limiting	
		6: Auto restarting (The output signal comes ON during the period after the power is recovered and before the output reaches the reference frequency.)				6: Auto-restarting after momentary power failure	
		7: Overload early warning (E33 = 0, Thermal calculation)				7: Motor overload early warning	
		7: Overload early warning (E33 = 1, Output current)				37: Current detected	
		8: KEYPAD operation mode				8: Keypad operation enabled	
		9: Inverter stopping				(1000): Inverter running	
		10: Ready output				10: Inverter ready to run	
		11: Line/inverter changeover (for 88)				11: Switch motor drive source between commercial power and inverter output (For MC on commercial line)	
		12: Line/inverter changeover (for 52-2)				12: Switch motor drive source between commercial power and inverter output (For secondary side)	

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Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
E20 to E24	Y1 to Y4 Terminal function Y5A and Y5C Terminal Function (Relay output) (Function selection)	13: Line/inverter changeover (for 52-1)		E20 to E24	Terminal [Y1] to [Y4] Function Terminal [Y5A/C] Function	13: Switch motor drive source between commercial power and inverter output (For primary side)	
		14: Motor 1/motor 2				49: Motor 2 selected	
		15: Terminal AX function				15: Select ***AX*** terminal function	
		16: Time-up signal for pattern operation					
		17: Cycle completion signal for pattern operation					
		18: Pattern operation stage No. indication 1					
		19: Pattern operation stage No. indication 2					
		20: Pattern operation stage No. indication 4					
		21: Alarm indication 1					
		22: Alarm indication 2					
		23: Alarm indication 4					
		24: Alarm indication 8					
		25: Fan operation signal				25: Cooling fan in operation	
		26: Auto-resetting				26: Auto-resetting	
		27: Universal DO (option)				27: Universal DO	
		28: Overheat early warning				28: Heat sink overheat early warning	
		29: Synchronization completed by synchronous operation card (option)					
		30: Life expectancy detection signal				30: Lifetime alarm	
		31: 2nd frequency level detection				31: Frequency (speed) detected 2	
		32: 2nd OL level early warning				38: Current detected 2	
		33: Terminal C1 off signal				33: Reference loss detected	
						59: Terminal [C1] wire break	
		34: Speed existence signal (option)				70: Speed valid	
		35: Speed agreement signal (option)				71: Speed agreement	
		36: PG error signal (option)				76: PG error detected	
		37: Torque limiting (signal with delay)				22: Inverter output limiting with delay	
E25	Y5 RY Operation Mode	0: At signal OFF, [Y5A] - [Y5C]: OFF At signal ON, [Y5A] -[Y5C]: ON	0	E24	Terminal [Y5A/C] Function	0 to 105: At signal OFF, [Y5A] - [Y5C]: OFF At signal ON, [Y5A] -[Y5C]: ON	—
		1: At signal OFF, [Y5A] - [Y5C]: ON At signal ON, [Y5A] -[Y5C]: OFF				(1000) to (1105): At signal OFF, [Y5A] - [Y5C]: ON At signal ON, [Y5A] -[Y5C]: OFF	
E30	FAR Function (Hysteresis)	0.0 to 10.0 Hz	2.5	E30	Frequency Arrival (Hysteresis width)	0.0 to 10.0 Hz	2.5
E31	FDT Function (Level)	0 to 400 Hz	60	E31	Frequency Detection (Level)	0.0 to 500.0 Hz	60.0
E32	(Hysteresis)	0.0 to 30.0 Hz	1.0	E32	(Hysteresis width)	0.0 to 500.0 Hz	1.0

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Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
E33	OL1 Function (Mode select)	Refer to E20 to E24, data = 7					
E34	OL1 Function (Level)	5% to 200% of inverter rated current	Motor rated current	E34	Overload Early Warning/Current Detection (Level)	Current value of 1% to 200% of the inverter rated current	Motor rated current
E35	(Timer)	0.0 to 60.0 s	10.0	E35	(Timer)	0.01 to 600.00 s	10.00
E36	FDT2 Function (Level)	0 to 400 Hz	60	E36	Frequency Detection 2 (Level)	0.0 to 500.0 Hz	60.0
E37	OL2 Function (Level)	5% to 200% of inverter rated current	Motor rated current	E37	Current Detection 2/Low Current Detection (Level)	Current value of 1% to 200% of the inverter rated current	Motor rated current
E35	OL1 Function (Timer)	0.0 to 60.0 s	10.0	E38	(Timer)	0.01 to 600.00 s	10.00
E40	Display Coefficient A	-999.00 to 999.00	0.01	E40	PID Display Coefficient A	-999 to 0.00 to 9990	100
				E50	Coefficient for Speed Indication	0.01 to 200.00	30.00
E41	Display Coefficient B	-999.00 to 999.00	0.00	E41	PID Display Coefficient B	-999 to 0.00 to 9990	0.00
E42	LED Display Filter	0.0 to 5.0 s	0.5	E42	LED Display Filter	0.0 to 5.0 s	0.5
E43	LED Monitor (Function)	0: Output frequency 1 (before slip compensation) (Hz)	0	E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	0
				E48	LED Monitor (Speed monitor item)	0: Output frequency (Before slip compensation)	0
		1: Output frequency 2 (after slip compensation) (Hz)		E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	0
				E48	LED Monitor (Speed monitor item)	1: Output frequency (After slip compensation)	0
		2: Set frequency (Hz)		E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	0
				E48	LED Monitor (Speed monitor item)	2: Reference frequency	0
		3: Output current (A)		E43	LED Monitor (Item selection)	3: Output current	0
		4: Output voltage (command value) (V)		E43	LED Monitor (Item selection)	4: Output voltage	0
		5: Motor synchronous speed (r/min)		E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	0
				E48	LED Monitor (Speed monitor item)	3: Motor speed in r/min	0
		6: Line speed (m/min)		E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	0
				E48	LED Monitor (Speed monitor item)	5: Line speed in m/min	0
		7: Load shaft speed (r/min)		E43	LED Monitor (Item selection)	0: Speed monitor (select by E48)	0
				E48	LED Monitor (Speed monitor item)	4: Load shaft speed in r/min	0
		8: Torque calculation value (%)		E43	LED Monitor (Item selection)	8: Calculated torque	0
		9: Consumption (kW)		E43	LED Monitor (Item selection)	9: Input power	0
		10: PID target value 1 (direct input from keypad panel)		E43	LED Monitor (Item selection)	10: PID command	0
		11: PID target value 2 (input from "F02 Frequency 1")					
		12: PID feedback amount		E43	LED Monitor (Item selection)	12: PID feedback amount	0
E44	LED Monitor (Display at STOP mode)	0: Set frequency value	0	E44	LED Monitor (Display when stopped)	0: Specified value	0
		1: Output value				1: Output value	

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Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
E45	LCD Monitor (Function)	0: Operation status, rotating direction, operation guide	0	E45	LCD Monitor (Item selection)	0: Running status, rotational direction and operation guide	0
		1: Output frequency (before slip compensation), output current, calculated torque value in bar graph				1: Bar charts for output frequency, current and calculated torque	
E46	(Language)	0: Japanese	0	E46	(Language selection)	0: Japanese	0
		1: English				1: English	
		2: German				2: German	
		3: French				3: French	
		4: Spanish				4: Spanish	
		5: Italian				5: Italian	
E47	LCD Monitor (Contrast)	0 (Soft) to 10 (Hard)	5	E47	LCD Monitor (Contrast control)	0 (Low) to 10 (High)	5
C01	Jump Frequency (Jump Freq. 1)	0 to 400 Hz	0	C01	Jump Frequency 1	0.0 to 500.0 Hz	0.0
C02	Jump Frequency (Jump Freq. 2)	0 to 400 Hz	0	C02	Jump Frequency 2	0.0 to 500.0 Hz	0.0
C03	Jump Frequency (Jump Freq. 3)	0 to 400 Hz	0	C03	Jump Frequency 3	0.0 to 500.0 Hz	0.0
C04	(Hysteresis)	0 to 30 Hz	3	C04	(Hysteresis width)	0.0 to 30.0 Hz	3.0
C20	JOG Frequency	0.00 to 400.00 Hz	5.00	C20	Jogging Frequency	0.00 to 500.00 Hz	0.00
				H54	Acceleration Time (Jogging)	0.00 to 6000 s	6.00/20.00
				H55	Deceleration Time (Jogging)	0.00 to 6000 s	6.00/20.00
C21	Pattern Operation (Mode select)	0: Perform a pattern operation cycle, then stop operation	0				
		1: Perform pattern operation repeatedly. Stop operation using a stop command.					
		2: Perform a pattern operation cycle, then continue operation with the last frequency set.					
C22 to C28	Stage 1 to 7	0.00 to 6000 s, F1 to F4, R1 to R4	0.00 F1				
C30	Frequency Command 2	0: Setting by keypad panel operation (⌃ ⌄ key)	2	C30	Frequency Command 2	0: Enable ⌃ / ⌄ keys on the keypad	2
		1: Setting by voltage input (terminal [12]) (0 to +10 V)				1: Voltage input to terminal [12] (-10 to +10 VDC)	
		2: Setting by current input (terminal [C1]) (4 to 20 mA)				2: Current input to terminal [C1] (4 to 20 mA DC)	
		3: Setting by voltage input + current input (terminal [12] + terminal [C1])				3: Sum of voltage and current inputs to terminals [12] and [C1]	
		4: Reversible operation with polarity (terminal [12]) (-10 to +10 V)		C30	Frequency Command 2	1: Voltage input to terminal [12] (-10 to +10 VDC)	2
				C35	Analog Input Adjustment for [12] (Polarity)	0: Bipolar	1

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Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
C30	Frequency Command 2	5: Reversible operation with polarity (terminal [12] + AIO frequency auxiliary input)		C30	Frequency Command 2	1: Voltage input to terminal [12] (-10 to +10 VDC)	2
				E63	Terminal [V2] Extended Function	1: Auxiliary frequency command 1	0
				C35	Analog Input Adjustment for [12] (Polarity)	0: Bipolar	1
		6: Inverse mode operation (terminal [12] (+10 V to 0)		C30	Frequency Command 2	1: Voltage input to terminal [12] (-10 to +10 VDC)	2
				C53	Selection of Normal/Inverse Operation (Frequency command 1)	1: Inverse operation	0
		7: Inverse mode operation (terminal [C1]) (20 to 4 mA)		C30	Frequency Command 2	2: Current input to terminal [C1] (4 to 20 mA DC)	2
				C53	Selection of Normal/Inverse Operation (Frequency command 1)	1: Inverse operation	0
		8: Setting by UP/DOWN control mode 1 (initial value = 0)		C30	Frequency Command 2	7: Terminal command ***UP***/***DOWN*** control	2
				H61	***UP***/***DOWN*** Control (Initial frequency setting)	0: Initial value is 0.00 Hz	1
		9: Setting by UP/DOWN control mode 2 (initial value = last final value)		C30	Frequency Command 2	7: Terminal command ***UP***/***DOWN*** control	2
				H61	***UP***/***DOWN*** Control (Initial frequency setting)	1: Last ***UP***/***DOWN*** command value on releasing the run command	1
		10: Setting by pattern operation					
		11: Setting by digital input or pulse train input		C30	Frequency Command 2	11: Digital input interface card (option) 12: Pulse train input * Max: 100 kHz/Maximum frequency	2
C31	Bias (Terminal [12])	-5.0% to +5.0%	0.0	C31	Analog Input Adjustment for [12] (Offset)	-5.0 to 5.0	0.0
C32	Gain (Terminal [C1])	-5.0% to +5.0%	0.0	C36	Analog Input Adjustment for [C1] (Offset)	-5.0 to 5.0	0.0
C33	Analog Setting Signal Filter	0.00 to 5.00 s	0.05	C33	Analog Input Adjustment for [12] (Filter time constant)	0.00 to 5.00 s	0.05
				C38	Analog Input Adjustment for [C1] (Filter time constant)	0.00 to 5.00 s	0.05
P01	Number of Motor 1 Poles	2 to 14	4	P01	Motor 1 (No. of poles)	2 to 22 poles	4
P02	Motor 1 (Capacity)	0.01 to 45.00 kW: Up to 22 kW	Motor capacity	P02	(Rated capacity)	0.01 to 1000 kW	Depending on inverter capacity
		0.01 to 500 kW: 30 kW and above					
P03	(Rated current)	0.00 to 2000 A	1.30	P03	(Rated current)	0.00 to 2000A	Depending on inverter capacity

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
P04	Motor 1 (Tuning)	0: Inactive 1: Active (Measure the %R1 and %X when the motor stops.) 2: Active (Measure the %R1 and %X when the motor stops, then measure the Io when the motor is rotating.)	0	P04	Motor 1 (Auto-tuning)	0: Disable 1: Tune while the motor stops. (%R1, %X and rated slip frequency) 2: Tune while the motor is rotating under V/f control (%R1, %X, rated slip frequency, no-load current, magnetic saturation factors 1 to 5, and magnetic saturation extension factors "a" to "c")	0
P05	(On-line tuning)	0: Inactive 1: Active	0				
P06	(No-load current)	0.00 to 2000 A	Fuji standard rated value	P06	Motor 1 (No-load current)	0.00 to 2000 A	Depending on inverter capacity
P07	(%R1)	0.00% to 50.00%	Fuji standard rated value	P07	(%R1)	0.00% to 50.00%	Depending on inverter capacity
P08	(%X)	0.00% to 50.00%	Fuji standard rated value	P08	(%X)	0.00% to 50.00%	Depending on inverter capacity
P09	(Slip compensation control 1)	0.00 to 15.00 Hz	0.00	P09	(Slip compensation gain for driving)	0.0% to 200.0% (P09 of G11S) / (P12 of MEGA) × 100% (e.g. If P09 of G11S is 1 Hz and P12 of MEGA is 2, specify 50%.)	100.0
				P11	(Slip compensation gain for braking)	0.00% to 200.0% (P09 of G11S) / (P12 of MEGA) × 100% (e.g. If P09 of G11S is 1 Hz and P12 of MEGA is 2, specify 50%.)	100.0
				P12	(Rated slip frequency)	0.00 to 15.00 Hz Specify the rated slip frequency for the motor. (Obtained also by auto-tuning by P04.)	0.00
H03	Data Initializing	0: Disabled 1: Initializing data	0	H03	Data Initialization	0: Disable initialization 1: Initialize all function code data to the factory defaults	0
H04	Auto-reset (Times)	0: Inactive 1 to 10: Number of retries	0	H04	Auto-reset (Times)	0: Disable 1 to 10: Number of retries	0
H05	(Reset interval)	2 to 20 s	5	H05	(Reset interval)	0.5 to 20.0 s	5.0
H06	Fan Stop Operation	0: ON/OFF control disabled (Always in operation) 1: ON/OFF control enabled	0	H06	Cooling Fan ON/OFF Control	0: Disable (Always in operation) 1: Enable (ON/OFF controllable)	0

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
H07	ACC/DEC Pattern (Mode select)	0: Inactive (linear acceleration and deceleration)	0	H07	Acceleration/Deceleration Pattern	0: Linear	0
		1: S-shape acceleration and deceleration (mild)				1: S-curve (Weak)	
		2: S-shape acceleration and deceleration (sharp)				2: S-curve (Arbitrary, according to H57 to H60 data)	
		3: Curvilinear acceleration and deceleration				3: Curvilinear	
H08	Rev. Phase Sequence Lock	0: Inactive	0	H08	Rotational Direction Limitation	0: Disable	0
		1: Active				1: Enable (Reverse rotation inhibited)	
H09	Start Mode	0: Inactive	0	H09	Starting Mode (Auto search)	0: Disable	0
		1: Active (At restart after a momentary power failure or at switching from line to inverter)				1: Enable (At restart after momentary power failure)	
		2: Active (Always)				2: Enable (At restart after momentary power failure and at normal start)	
H10	Energy-saving Operation	Refer to F09, Torque Boost 1.					
H11	DEC Mode	0: Deceleration-to-stop based on data set to "H07 Non-linear Acceleration and Deceleration."	0	H11	Deceleration Mode	0: Normal deceleration	0
		1: Coast-to-stop				1: Coast-to-stop	
H12	Instantaneous OC Limiting	0: Inactive	1	H12	Instantaneous Overcurrent Limiting (Mode selection)	0: Disable	1
		1: Active				1: Enable	
H13	Auto-restart (Restart time)	0.1 to 10.0 s	0.5	H13	Restart Mode after Momentary Power Failure (Restart time)	0.1 to 10.0 s	Depending on inverter capacity
H14	(Freq. fall rate)	0.00: Deceleration time selected by F08	10.00	H14	(Frequency fall rate)	0.00: Deceleration time selected by F08	999
		0.01 to 100.00 Hz/s				0.01 to 100.00 Hz/s	
						999: Follow the current limit command	
H15	(Holding DC voltage)	200 to 300 V: (200 V class)	235	H15	(Continuous running level)	200 to 300 V for 200 V class series	235
		400 to 600 V: (400 V class)	470			400 to 600 V for 400 V class series	470
H16	(OPR command selfhold time)	0.0 to 30.0 s	999	H16	(Allowable momentary power failure time)	0.0 to 30.0s	999
		999: Automatically determined by inverter				999: Automatically determined by inverter	
H18	Torque Control (Mode selection)	0: Inactive (operation by frequency command)	0				
		1: Torque control active (Terminal [12]: 0 to 10 V/0% to 200%)					
		2: Torque control active (Terminal [12]:-10 V to +10 V/-200% to +200%)					
H19	Active Drive	0: Inactive	0				
		1: Active					

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
H20	PID Control (Mode select)	0: No operation	0	J01	PID Control (Mode selection)	0: Disable	0
		1: Forward operation (When the PID output rises, the output frequency rises.)				1: Enable (Process control, normal operation)	
		2: Reverse operation (When the PID output rises, the output frequency drops.)				2: Enable (Process control, inverse operation)	
H21	(Feedback signal)	0: Control terminal [12], forward operation (0 to 10 V voltage input)	1	J02	PID Control (Remote command SV)	1: PID process command 1 (Analog input terminals [12], [C1], and [V2])	0
				E61	Terminal [12] Extended Function	5: PID feedback amount	
		1: Control terminal [C1], forward operation (4 to 20 mA current input)		J02	PID Control (Remote command SV)	1: PID process command 1 (Analog input terminals [12], [C1], and [V2])	
				E62	Terminal [C1] Extended Function	5: PID feedback amount	
		2: Control terminal [12], reverse operation (10 to 0 V voltage input)					
		3: Control terminal [C1], reverse operation (20 to 4 mA current input)					
H22	(P-gain)	0.01 to 10.00 times	0.10	J03	PID Control P (Gain)	0.000 to 30.000 times	0.100
H23	(I-gain)	0.0 to 3600.0 s	0.0	J04	I (Integral time)	0.0 to 3600.0 s	0.0
H24	(D-gain)	0.00 to 10.00 s	0.00	J05	D (Differential time)	0.00 to 600.00 s	0.00
H25	(Feedback filter)	0.0 to 60.0 s	0.5	J06	(Feedback filter)	0.0 to 900.0 s	0.5
H26	PTC Thermistor (Mode select)	0: Inactive	0	H26	Thermistor (for motor) (Mode selection)	0: Disable	0
		1: Active				1: PTC (The inverter immediately trips with ﾌﾟﾀｰ displayed.)	
H27	(Level)	0.00 to 5.00 V	1.60	H27	(Level)	0.00 to 5.00 V	0.35
H28	Droop Operation	-9.9 to 0.0 Hz	0.0	H28	Droop Control	-60.0 to 0.0 Hz	0.0
H30	Serial Link (Function select)	0: Frequency command = Disabled, Operation command = Disabled	0	H30	Communications Link Function (Mode selection)	0: F01/C30 (Frequency command), F02 (Run command)	0
		1: Frequency command = Enabled, Operation command = Disabled				4: RS-485 (Port 2) (Frequency command), F02 (Run command)	
		2: Frequency command = Disabled, Operation command = Enabled				6: F01/C30 (Frequency command), RS-485 (Port 2) (Run command)	
		3: Frequency command = Enabled, Operation command = Enabled				8: RS-485 (Port 2) (Frequency command), RS-485 (Port 2) (Run command)	

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
H31	RS-485 (Address)	1 to 31	1	y11	RS-485 Communication 2 (Station address)	1 to 235	1
H32	(Mode select on no response error)	0: Immediate Er-8 trip	0	y12	(Communications error processing)	0: Immediately trip with alarm Er-P	0
		1: Continue operation within timer time, Er-8 trip after timer time				1: Trip with alarm Er-P after running for the period specified by timer y13	
		2: Continue operation and effect retry within timer time, then invoke an Er-8 trip if a communication error occurs.				2: Retry during the period specified by timer y13. If the retry fails, trip with alarm Er-P. If it succeeds, continue to run.	
		3: Continue operation				3: Continue to run	
H33	(Timer)	0.0 to 60.0 s	2.0	y13	(Timer)	0.0 to 60.0 s	2.0
H34	(Baud rate)	0: 19200 bit/s	1	y14	(Baud rate)	3: 19200 bps	3
		1: 9600 bit/s				2: 9600 bps	
		2: 4800 bit/s				1: 4800 bps	
		3: 2400 bit/s				0: 2400 bps	
		4: 1200 bit/s					
H35	(Data length)	0: 8 bit	0	y15	(Data length)	0: 8 bits	0
		1: 7 bit				1: 7 bits	
H36	(Parity check)	0: None	0	y16	(Parity check)	0: None (2 stop bits)	0
		1: Even				1: Even parity (1 stop bit)	
		2: Odd				2: Odd parity (1 stop bit)	
H37	(Stop bits)	0: 2 bit	0	y17	(Stop bits)	0: 2 bits	0
		1: 1 bit				1: 1 bit	
H38	(No response error detection time)	0: No detection	0	y18	(No-response error detection time)	0: No detection	0
		1 to 60 s				1 to 60 s	
H39	(Response interval)	0.00 to 1.00 s	0.01	y19	(Response interval)	0.00 to 1.00 s	0.01
A01	Maximum Frequency 2	50 to 400 Hz	60	A01	Maximum Frequency 2	25.0 to 500.0 Hz	60.0
A02	Base Frequency 2	25 to 400 Hz	50	A02	Base Frequency 2	25.0 to 500.0 Hz	50.0
A03	Rated Voltage 2 (At base frequency 2)	0: (Output voltage proportional to source voltage)	200 (200 V class)	A03	Rated Voltage at Base Frequency 2	0: Output a voltage in proportion to input voltage	200 (200 V class series)
		80 to 240 V: (200 V class) 320 to 480 V: (400 V class)	400 (400 V class)			80 to 240: Output an AVR-controlled voltage (for 200 V class series) 160 to 500: Output an AVR-controlled voltage (for 400 V class series)	400 (400 V class series)
A04	Maximum Voltage 2	80 to 240 V: (200 V class) 320 to 480 V: (400 V class)	200 (200 V class) 400 (400 V class)	A04	Maximum Output Voltage 2	80 to 240: Output an AVR-controlled voltage (for 200 V class series) 160 to 500: Output an AVR-controlled voltage (for 400 V class series)	200 (200 V class series) 400 (400 V class series)

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
A05	Torque Boost 2	0.0: Automatic torque boost (H10 = 0 when the auto-energy saving operation is inactive)	G11S: 0.0	A13	Load Selection/Auto Torque Boost/Auto Energy Saving Operation 2	2: Auto-torque boost	1
		0.1 to 0.9: Square law reduction torque (H10 = 0 when the auto-energy saving operation is inactive)		A13	Load Selection/Auto Torque Boost/Auto Energy Saving Operation 2	0: Variable torque load	1
				A05	Torque Boost 2	0.0 to 20.0: *	Depending on inverter capacity
		1.0 to 1.9: Proportional torque (H10 = 0 when the auto-energy saving operation is inactive)					
		2.0 to 20.0: Constant torque (H10 = 0 when the auto-energy saving operation is inactive)		A13	Load Selection/Auto Torque Boost/Auto Energy Saving Operation 2	1: Constant torque load	1
				A05	Torque Boost 2	0.0 to 20.0: *	Depending on inverter capacity
		0.0: Automatic torque boost (H10 = 1 when the auto-energy saving operation is active)		A13	Load Selection/Auto Torque Boost/Auto Energy Saving Operation 2	5: Auto-energy saving operation (Auto-torque boost during ACC/DEC)	1
		0.1 to 0.9: Square law reduction torque (H10 = 1 when the auto-energy saving operation is active)		A13	Load Selection/Auto Torque Boost/Auto Energy Saving Operation 2	3: Auto-energy saving operation (Variable torque load during ACC/DEC)	1
				A05	Torque Boost 2	0.0 to 20.0: *	Depending on inverter capacity
		1.0 to 1.9: Proportional torque (H10 = 1 when the auto-energy saving operation is active)					
		2.0 to 20.0: Constant torque (H10 = 1 when the auto-energy saving operation is active)		A13	Load Selection/Auto Torque Boost/Auto Energy Saving Operation 2	4: Auto-energy saving operation (Constant torque load during ACC/DEC)	1
				A05	Torque Boost 2	0.0 to 20.0: *	Depending on inverter capacity
A06	Electric Thermal Overload Relay for Motor 2 (Select)	0: Inactive	1	A07	Electronic Thermal Overload Protection for Motor 2 (Overload detection level)	0.00: Disable	Motor rated current
		1: Active (for general-purpose motor)		A06	(Select motor characteristics)	1: For a general-purpose motor with shaft-driven cooling fan	1
		2: Active (for inverter motor)				2: For an inverter-driven motor, non-ventilated motor, or motor with separately powered cooling fan	
A07	(Level)	20% to 135% of the rated current of the inverter	Motor rated current	A07	(Overload detection level)	1% to 135% of the rated current (allowable continuous drive current) of the motor	Motor rated current
A08	(Thermal time constant)	0.5 to 75.0 min	5.0/10.0	A08	(Thermal time constant)	0.5 to 75.0 min	5.0/10.0
A09	Torque Vector Control 2	0: Inactive	0	A14	Drive Control Selection 2	0: V/f control with slip compensation inactive	0
		1: Active				1: Dynamic torque vector control	

* For the torque boost settings, refer to the conversion tables on pages A-67 and onwards.

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
A10	Number of Motor-2 Poles	2 to 14 poles	4	A15	Motor 2 (No. of poles)	2 to 22 poles	4
A11	Motor 2 (Capacity)	0.01 to 45.00 kW: Up to 22 kW 0.01 to 500 kW: 30 kW or above	Motor capacity	A16	(Rated capacity)	0.01 to 1000 kW	Depending on inverter capacity
A12	(Rated current)	0.00 to 2000 A	Motor rated current	A17	(Rated current)	0.00 to 2000 A	Depending on inverter capacity
A13	(Tuning)	0: Inactive 1: Active (Measure the %R1 and %X when the motor stops.) 2: Active (Measure the %R1 and %X when the motor stops, then measure the Io when the motor is rotating.)	0	A18	(Auto-tuning)	0: Disable 1: Tune while the motor stops. (%R1, %X and rated slip frequency) 2: Tune while the motor is rotating under V/f control (%R1, %X, rated slip frequency, no-load current, magnetic saturation factors 1 to 5, and magnetic saturation extension factors "a" to "c")	0
A14	(On-line tuning)	0: Inactive 1: Active	0				
A15	(No-load current)	0.00 to 2000 A	Fuji standard rated value	A20	Motor 2 (No-load current)	0.00 to 2000 A	Depending on inverter capacity
A16	(%R1 setting)	0.00% to 50.00%		A21	(%R1)	0.00% to 50.00%	Depending on inverter capacity
A17	(%X setting)	0.00% to 50.00%		A22	(%X)	0.00% to 50.00%	Depending on inverter capacity
A18	(Slip compensation control 2)	0.00 to 15.00 Hz	0.00	A23	(Slip compensation gain for driving)	0.0% to 200.0% (A18 of G11S) / (A26 of MEGA) × 100% (e.g. If A18 of G11S is 1 Hz and A26 of MEGA is 2, specify 50%.)	100.0
				A25	(Slip compensation gain for braking)	0.00% to 200.0% (A18 of G11S) / (A26 of MEGA) × 100% (e.g. If A18 of G11S is 1 Hz and A26 of MEGA is 2, specify 50%.)	100.0
				A26	(Rated slip frequency)	0.00 to 15.00 Hz Specify the rated slip frequency for the motor. (Obtained also by auto-tuning by P04.)	0.00
				* For settings of the 2nd motor, specify the related function codes as needed. For details of those function codes, refer to the description of A42 in Chapter 5 "FUNCTION CODES."			
U01	Maximum Compensation Frequency During Braking Torque Limit	0 to 65535	75	H76	Torque Limiter (Frequency increment limit for braking)	0.0 to 500.0 Hz	5.0
U02	1st S-shape Level at Acceleration	1% to 50%	10	H57	1st S-curve Acceleration Range (Leading edge)	0% to 100%	10

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
U03	2nd S-shape Level at Acceleration	1% to 50%	10	H58	2nd S-curve Acceleration Range (Trailing edge)	0% to 100%	10
U04	1st S-shape Level at Deceleration	1% to 50%	10	H59	1st S-curve Deceleration Range (Leading edge)	0% to 100%	10
U05	2nd S-shape Level at Deceleration	1% to 50%	10	H60	2nd S-curve Deceleration Range (Trailing edge)	0% to 100%	10
U08	Main DC Link Capacitor (Initial value)	0 to 65535	-	H47	Initial Capacitance of DC Link Bus Capacitor	0 to 65535	-
U09	(Measured value)	0 to 65535	0	H42	Capacitance of DC Link Bus Capacitor	0 to 65535	-
U10	PC Board Capacitor Powered on Time	0 to 65535 h	0	H48	Cumulative Run Time of Capacitors on Printed Circuit Boards	0 to 9999 (10h)	-
U11	Cooling Fan Operating Time	0 to 65535 h	0	H43	Cumulative Run Time of Cooling Fan	0 to 9999 (10h)	-
U13	Magnetize Current Vibration Damping Gain	0 to 32767	819/410	H80	Output Current Fluctuation Damping Gain for Motor 1	0.00 to 0.40	0.20
U15	Slip Compensation Filter Time Constant	0 to 32767	556/546	P10	Motor 1 (Slip compensation response time)	0.01 to 10.00 s	0.50
U23	Integral Gain of Continuous Operation at Power Failure	0 to 65535	1738/1000	H92	Continuity of Running (P)	999: Standard value	999
U24	Proportional Gain of Continuous Operation at Power Failure	0 to 65535	1024/1000	H93	(I)	999: Standard value	999
U48	Input Phase Loss Protection	0, 1: Active	55 kW or below: 0 75 kW or above: 1	H98	Protection/Maintenance Function (Mode selection)	Bit 1: Detect input phase loss (0: Disabled; 1: Enabled)	83
		2: Inactive				Bit 0: Lower the carrier frequency automatically (0: Disabled; 1: Enabled)	
U49	RS-485 Protocol Selection	0: FGI-bus	0	y20	RS-485 Communication 2 (Protocol selection)	2: Fuji general-purpose inverter protocol	0
		1: Modbus-RTU				0: Modbus RTU protocol	
U56	Speed Agreement/PG Error (Detection width)	0% to 50%	10	d21	Speed Agreement/PG Error (Hysteresis width)	0.0% to 50.0%	10.0
U57	(Detection timer)	0.0 to 10.0 s	0.5	d22	(Detection timer)	0.00 to 10.00 s	0.50
U58	PG Error Selection	0: Continue to run (Outputs PG error signal)	1	d23	PG Error Processing	0: Continue to run	2
		1: Stop running (Immediately ꟼ trip)				2: Stop running with alarm 2	
U59	Braking-resistor Function Select	Standard applied resistor (one resistor is used)	00	F50	Electronic Thermal Overload Protection for Braking Resistor (Discharging capability)	Set the value of the discharging capability (kWs), allowable average loss (kW), and resistance (Ω) of the braking resistor currently used to the function codes F50 to F52, respectively.	7.5 kW or below: 0, 11 kW or above: OFF
		1: DB0.75-2C (100Ω 200 W)		F51	(Allowable average loss)		0.001
		2: DB2.2-2C (40Ω 400 W)		F52	(Resistance)		0.01
		3: DB3.7-2C (33Ω 400 W)					
		4: DB5.5-2C (20Ω 800 W)					
		5: DB7.5-2C (15Ω 900 W)					
		6: DB0.75-4C (200Ω 200 W)					
		7: DB2.2-4C (160Ω 400 W)					
		8: DB3.7-4C (130Ω 400 W)					
		9: DB5.5-4C (80Ω 800 W)					

FRENIC5000G11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
U60	Regeneration Avoidance at Deceleration	Refer to F41 and E17, Torque Limiter 1 and 2.					
U61	Voltage Detect Offset and Gain Adjustment	0 (Up to 22 kW) 0: Inactive (fixed)	0				
		0 to 2 (30 kW or above) 0: Inactive	0				
		1: Voltage detect offset adjustment					
		2: Voltage detect gain adjustment					
The FRENIC5000G11S series of inverters do not support these functions shown at the right. When replacing the FRENIC5000G11S with the FRENIC-MEGA, cancel or disable these function codes in FRENIC-MEGA in order to conform them to the FRENIC5000G11S.				F43	Current Limiter (Mode selection)	0: Disable (No current limiter works.)	2
				H50	Non-linear V/f Pattern 1 (Frequency)	0.0: Cancel (30 kW or above)	0.0/5.0
				H51	(Voltage)	0: Cancel (30 kW or above)	0/20
				H72	Main Power Down Detection (Mode selection)	0: Disable	1

[4] FRENIC5000P11S vs. FRENIC-MEGA

FRENIC5000P11S				FRENIC-MEGA			
Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above	Code	Name	Data setting range	Default setting 22 kW or below/ 30 kW or above
When replacing the FRENIC5000P11S with the FRENIC-MEGA, set the F80 data of the FRENIC-MEGA to "1: LD (Low Duty) mode." The LD-mode inverter brings out the continuous rated current level which enables the inverter to drive a motor with one rank higher capacity, but its overload capability (%) against the continuous current rating level decreases.				F80	Switching between HD and LD drive modes	1: LD (Low Duty) mode	0
Replacement of function codes for the FRENIC5000P11S is basically equivalent to that for the FRENIC5000G11S given on pages A-48 to A-66, except for the data setting range of following function codes.							
F26	Motor Sound (Carrier frequency)	0.75 to 15 kHz: Up to 22 kW	2	F26	Motor Sound (Carrier frequency)	0.75 to 15 kHz: 18.5 kW or below (Up to 16 kHz can be specified.)	2
		0.75 to 10 kHz: 30 to 75 kW				0.75 to 16 kHz: 30 to 55 kW	
		0.75 to 6 kHz: 90 kW or above				0.75 to 10 kHz: 75 kW or above	

■ Torque boost conversion tables

FRENIC5000G9S/P9S (22 kW or below) vs. FRENIC-MEGA

G9S/P9S	FRENIC-MEGA		Remarks
Data for 07	F37	F09	
0.1	0	0.0%	Adjust the torque boost using H50 and H51 as needed.
0.2		2.9%	
0.3		5.8%	
0.4		8.6%	
0.5		11.5%	
0.6		14.4%	
0.7		17.3%	
0.8		20.0%	
0.9		20.0%	
1.0	1	0.0%	Adjust the torque boost using H50 and H51 as needed.
1.1		2.6%	
1.2		5.1%	
1.3		7.7%	
1.4		10.2%	
1.5		12.8%	
1.6		15.3%	
1.7		17.9%	
1.8		20.0%	
1.9		20.0%	
2.0	1	0.0%	* For data values other than those listed at the left, use the expression given below.
3.0		1.3%	
4.0		2.6%	
5.0		3.8%	
6.0		5.1%	
7.0		6.4%	
8.0		7.7%	
9.0		8.9%	
10.0		10.2%	
11.0		11.5%	
12.0		12.8%	
13.0		14.1%	
14.0		15.3%	
15.0		16.6%	
16.0		17.9%	
17.0		19.2%	
17.6		19.9%	
18.0		20.0%	
19.0		20.0%	
20.0		20.0%	

* Expression
If 07 data of G9S or P9S is 2.0 to 20.0,
F09 data (%) of FRENIC-MEGA = 1.278 × ([07 data of G9S or P9S] - 2.0)

FRENIC5000G9S/P9S (30 kW or above) vs. FRENIC-MEGA

G9S/P9S	FRENIC-MEGA		Remarks
Data for 07	F37	F09	
0.1	0	4.4%	Adjust the torque boost using H50 and H51 as needed.
0.2		4.4%	
0.3		4.4%	
0.4		4.4%	
0.5		5.0%	
0.6		6.3%	
0.7		7.5%	
0.8		8.8%	
0.9		10.0%	
1.0	1	4.4%	Adjust the torque boost using H50 and H51 as needed.
1.1		4.4%	
1.2		4.4%	
1.3		4.4%	
1.4		4.4%	
1.5		5.6%	
1.6		6.7%	
1.7		7.8%	
1.8		8.9%	
1.9		10.0%	
2.0	1	0.0%	* For data values other than those listed at the left, use the expression given below.
3.0		0.6%	
4.0		1.1%	
5.0		1.7%	
6.0		2.2%	
7.0		2.8%	
8.0		3.3%	
9.0		3.9%	
10.0		4.4%	
11.0		5.0%	
12.0		5.6%	
13.0		6.1%	
14.0		6.7%	
15.0		7.2%	
16.0		7.8%	
17.0		8.3%	
18.0		8.9%	
19.0		9.4%	
20.0		10.0%	

* Expression
If 07 data of G9S or P9S is 2.0 to 20.0,
F09 data (%) of FRENIC-MEGA = 0.556 × ([07 data of G9S or P9S] - 2.0)

FRENIC5000G11S/P11S (22 kW or below) vs. FRENIC-MEGA

G11S/P11S	FRENIC-MEGA		Remarks
Data for F09	F37	F09	
0.1	0	7.0%	Adjust the torque boost using H50 and H51 as needed.
0.2		8.3%	
0.3		9.5%	
0.4		10.8%	
0.5		12.0%	
0.6		13.3%	
0.7		14.5%	
0.8		15.8%	
0.9		17.0%	
1.0	1	7.0%	Adjust the torque boost using H50 and H51 as needed.
1.1		8.1%	
1.2		9.2%	
1.3		10.3%	
1.4		11.5%	
1.5		12.6%	
1.6		13.7%	
1.7		14.8%	
1.8		15.9%	
1.9		17.0%	
2.0	1	0.0%	* For data values other than those listed at the left, use the expression given below.
3.0		1.3%	
4.0		2.6%	
5.0		3.8%	
6.0		5.1%	
7.0		6.4%	
8.0		7.7%	
9.0		8.9%	
10.0		10.2%	
11.0		11.5%	
12.0		12.8%	
13.0		14.1%	
14.0		15.3%	
15.0		16.6%	
16.0		17.9%	
17.0		19.2%	
17.6		19.9%	
18.0		20.0%	
19.0		20.0%	
20.0		20.0%	

* Expression
If F09 data of G11S or P11S is 2.0 to 20.0,
F09 data (%) of FRENIC-MEGA = 1.278 × ([F09 data of G11S or P11S] - 2.0)

FRENIC5000G11S/P11S (30 kW or above) vs. FRENIC-MEGA

G11S/P11S	FRENIC-MEGA		Remarks
Data for F09	F37	F09	
0.1	0	8.0%	Adjust the torque boost using H50 and H51 as needed.
0.2		9.3%	
0.3		10.5%	
0.4		11.8%	
0.5		13.0%	
0.6		14.3%	
0.7		15.5%	
0.8		16.8%	
0.9		18.0%	
1.0	1	8.0%	Adjust the torque boost using H50 and H51 as needed.
1.1		9.1%	
1.2		10.2%	
1.3		11.3%	
1.4		12.5%	
1.5		13.6%	
1.6		14.7%	
1.7		15.8%	
1.8		16.9%	
1.9		18.0%	
2.0	1	0.0%	* For data values other than those listed at the left, use the expression given below.
3.0		0.6%	
4.0		1.1%	
5.0		1.7%	
6.0		2.2%	
7.0		2.8%	
8.0		3.3%	
9.0		3.9%	
10.0		4.4%	
11.0		5.0%	
12.0		5.6%	
13.0		6.1%	
14.0		6.7%	
15.0		7.2%	
16.0		7.8%	
17.0		8.3%	
18.0		8.9%	
19.0		9.4%	
20.0		10.0%	

* Expression
If F09 data of G11S or P11S is 2.0 to 20.0,
F09 data (%) of FRENIC-MEGA = 0.556 × ([F09 data of G11S or P11S] - 2.0)

Glossary

This glossary explains the technical terms that are frequently used in this manual.

富士电机
Fuji Electric
13916183699
021-60510862

富士电机
Fuji Electric

13916183699

021-60510862

Acceleration time

A period required for an inverter to increase its output from 0 Hz to the maximum frequency. It should be specified, taking into account the inertia of the machinery (load).

Related function codes: F03, A01, b01, r01, F07, E10, E12, E14 and H54

Alarm output (for any alarm)

A signal issued when any of the protective functions is activated.

Allowable voltage/frequency fluctuation

General-purpose inverters are designed to be supplied with power from commercial power lines. The allowable voltage/frequency fluctuation ranges are specified (see Chapter 2, Section 2.1). Even power supplied by a private power generator should meet the power requirements.

Analog input

An external voltage or current input to give the inverter a frequency command through any of terminals [12], [C1] and [V2]. Assignment of functions to these terminals can be changed using function codes.

Related function codes: E61 to E63

Anti-regenerative control (Automatic deceleration)

A control mode that prevents the inverter from causing an overvoltage trip due to excessive regenerative energy, by automatically controlling the deceleration time and output frequency, even if no braking resistor is used.

Related function codes: H69

Auto energy saving operation

Energy saving operation that automatically controls the output voltage to the motor in order to minimize the total power loss of the motor and the inverter.

Related function codes: F37, A13, b13 and r13

Auto search

Automatically searching for the rotational speed and direction of the motor idling without power supplied in order for the inverter to smoothly drive the idling motor again.

Related function codes: H09, H46 and H49

Auto-reset function

A function that makes the inverter automatically attempt to reset the tripped state and restart even if any protective function is activated. The number of reset times and interval can be specified with function codes.

Related function codes: H04 and H05

Auto-tuning

Automatically tuning up the inverter itself by detecting the constants of the connected motor and saving the motor parameters in the inverter. Auto-tuning is started by the keypad operation.

Related function codes: P04, A18, b18 and r18

Auxiliary power input for the control circuit

A general-purpose inverter usually supplies its control circuit with power from the DC link bus. In a panel that shuts down the power if the inverter trips, therefore, the panel display disappears with the trip. The auxiliary power input is used to keep the panel display.

AVR (Automatic Voltage Regulator)

Voltage regulator that keeps the inverter output voltage constant regardless of input voltage fluctuations.

Balanceless-bumpless switching

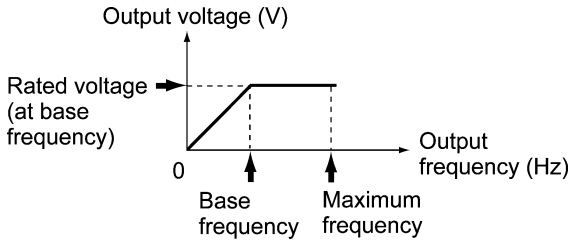
To switch the frequency command source to the keypad from any other source, in which the inverter inherits the current frequency that has applied before switching. This switching provides smooth switching and shockless running

Related function codes: F01 and C30

Base frequency

The minimum frequency at which an inverter's output voltage becomes constant.

Related function codes: F04, A02, b02 and r02



Bias

Bias that is a value to be added to an analog frequency command value (e.g., 0 to 10 VDC) to produce the output frequency. It applies to the frequency control signal voltage from the upper level controller.

Related function codes: F18 and C50 to C52

Braking torque

Generally, a motor acts as a generator during a decelerate-to-stop sequence, where the kinetic energy built up in the machinery (load) is transformed into electric power and returned to the inverter. The inverter consumes the returned power to generate a braking torque.

Carrier frequency

Frequency used to determine the modulation period of a pulse width under the inverter's PWM control. The higher the carrier frequency, the closer to the sinusoidal waveform the inverter output current waveform approaches and the quieter the motor sound becomes. However, noise emitted from the inverter increases.

Related function codes: F26

Coast-to-stop command (***BX***)

A digital terminal command input to one of the control circuit terminals, which forces the inverter to immediately shut down its output, causing the motor to coast to a stop. Used to forcibly stop the motor independent of inverter control.

Related function codes: E01 to E09, E98 and E99

Constant torque load

Machinery (load) that requires a constant torque independent of the inverter's output frequency (motor speed). The power consumption increases in proportion to the motor speed. For such machinery (load), e.g., a material conveyer and a lift, the HD-mode inverters are required.

Control circuit terminals

Terminals mainly used to connect to signal lines from a PLC or control relay circuits. Inverters with any capacity have these terminals in common. These terminals include an analog output terminal for a conventional analog meter and a pulse output terminal.

Cooling fan ON/OFF control

A control that automatically turns the cooling fan ON and OFF depending on the temperature detected inside the inverter, saving unnecessary cooling fan operations.

Related function codes: H06

Current limiter

A control that limits the inverter output current to a specified level by varying the output frequency.

Related function codes: F43 and F44

Current response

A performance index under vector control, which indicates how often the inverter can change the direction of current to the motor. If this index is 100 Hz, it means that the current direction change command is applicable 100 times a second.

DC braking

DC current braking that flows a DC current through the motor stator windings to generate a magneto electric loss of the rotor. Used to firmly stop the motor when the load has a large moment of inertia and a low friction torque.

Related function codes: F20, F21, F22, A09, A10, A11, b09, b10, b11, r09, r10 and r11

DC link bus voltage

The voltage of the DC link bus that is an inverter input circuit to convert the input AC power to the DC power. It is approx. 1.4 times the input power voltage and is used as a reference voltage in detecting an undervoltage or overvoltage condition. It can be monitored on the keypad.

Deceleration time

A period required for an inverter to decelerate its output from the maximum frequency to 0 Hz.

Related function codes: F03, F08, E11 and H55

Droop control

A control that reduces the inverter's output frequency depending on the motor's load factor. When the machinery (load) is driven by two or more inverter-driven motors, this control helps the inverters balance their driving forces.

Related function codes: H28

Dynamic torque vector control

A high performance control system in which the inverter calculates the flux and torque vectors based on the real-time voltage and current applied to the motor power terminals. Its basic control is V/f control.

Electronic thermal overload protection

A function that protects the motor from overheating with internal electronic calculation, without using a thermistor or any other thermal sensors on the motor.

Related function codes: F50 to F52

Enable data change with keypad (***WE-KP***)

A digital terminal command input to one of the control circuit terminals, which protects function code data from accidentally getting changed from the keypad when this command is OFF in order to prevent the motor from unexpectedly running.

Turning this command ON enables data change from the keypad.

Related function codes: E01 to E09, E98 and E99

Encoder (PG: pulse generator)

One type of rotational sensor, directly mounted on the output shaft of a vector motor. It generally outputs A and B phase signals. According to these signals, the inverter can detect the motor rotational direction, speed and amount. Using the encoder requires an optional PG interface card (OPC-G1-PG) on the inverter.

Filter

A filter that smoothens and cleans a signal, eliminating unnecessary frequency band. Applying a filter will produce a desirable effect in some cases:

- Suppressing fluctuation of unstable, hard-to-read display on the keypad (F42).
- Suppressing noise superimposed on analog input for frequency command (C33, C38 and C43).
- Stabilizing analog speed command and feedback signal (d01, d02, d09, d10 and d61).

Frequency accuracy

An index that indicates the accuracy of inverter output frequency relative to the commanded frequency. If the frequency command is given digitally from the keypad, the accuracy will be ±0.01% of the maximum frequency.

Frequency command

Reference frequency whose sources can be specified by function code F01. In addition, it can be given by multi-frequency commands and via an RS-485 communications link or other open networks.

Frequency command resolution

Resolution of a frequency command given in an analog input format such as a voltage input. The resolution of terminal [12] input, for example, is 1/3000 of the maximum frequency.

Frequency limiter

A function that determines the upper and lower limits of the inverter output frequency to protect the motor. Accordingly, it protects the machinery (load) from getting unexpected frequency command.

Related function codes: F15 and F16

HD (High Duty) mode

A mode that applies to the inverter for driving a motor whose capacity is identical to the inverter's one. The HD-mode inverter withstands 150% of the rated current for a minute, and 200% for three seconds.

Related function codes: H80

Interphase (voltage) unbalance

Interphase unbalance of three-phase AC input voltage (supply voltage) that is calculated by the following expression stipulated by the IEC Standard.

$$\text{Interphase voltage unbalance (\%)} = \frac{\text{Max. voltage (V) - Min. voltage (V)}}{\text{Three-phase average voltage (V)}} \times 67$$

The IEC Standard requires variable speed drives such as inverters to withstand up to 2% of interphase voltage unbalance.

Inverse operation

Inverting the scale of the inverter's output frequency to its analog frequency command level. Used for applications such as air-conditioners that require switching between cooling and heating.

Related function codes: C53

Jogging operation

Inching the motor for mechanical positioning in the machinery (load). The frequency command, acceleration/deceleration time and dynamic response during the vector control can be separately specified.

Related function codes: C20

Jump frequencies

Jump frequencies that are used to skip inverter operation in the specified jump frequency bands within the driving frequency band in order to avoid resonance caused by the motor speed and natural frequency of the machinery. In the jump frequency bands, the specified acceleration/ deceleration time applies.

Related function codes: C01 to C04

LD (Low Duty) mode

A mode that applies to the inverter for driving a motor whose capacity is one rank higher than the inverter's one. The LD-mode inverter withstands 120% of the rated current for a minute.

Related function codes: H80

Line speed

Traveling speed of a machine (e.g., conveyor) driven by the inverter-driven motor. The unit is meter per minute (m/min). The speed can be displayed on the keypad.

Related function codes: E43 and E50

Link function

A function that starts or stops the inverter through a communications link such as RS-485 interface or other open network, without using the keypad or digital input terminal signals.

Related function codes: H30, y98 and y99

Main circuit terminals

Power input/output terminals mainly used to connect to commercial power lines, braking resistors, DC reactors and motors. The size and other specifications of the terminals differ depending on the inverter capacity.

Maximum frequency

The maximum output frequency of an inverter. It equals to the reference frequency when the +10V input applies on terminal [12] or the 20 mA input applies on terminal [C1] if the gain is set at 100%.

Related function codes: F03, A01, b01 and r01

Mock alarm

Alarm intentionally caused by activating the inverter protective function in order to check whether external sequences function correctly at the time of machine setup.

Simultaneous keying or using the related function code causes a mock alarm. The mock alarm can be reset by the terminal command ***RST***.

Related function codes: H45

Motor selection

A general-purpose inverter can drive more than one motor by switching. A FRENIC-MEGA inverter can drive up to four motors by switching with terminal commands ***M2***, ***M3*** and ***M4***. It is also possible to register four sets of motor drive data, including base frequencies, drive controls and numbers of poles.

Related function codes: E01 to E09

Multi-frequency selection

Selection from 15 steps of reference frequencies that can be switched by digital terminal command input to the control circuit terminals.

Those 15 steps of frequencies should be preset with function codes C05 to C19.

Related function codes: E01 to E09, E98 and E99

Output circuit filter

An output circuit filter (OFL-□□□-□A) that is used to eliminate noise leakages from the inverter main output cable when the cable length between the inverter and the motor is long or when an inverter drives two or more motors so that the total cable length is long.

Nominal applied motors

Three-phase induction motors (4-pole) that can be normally driven by the inverter. The output ratings are expressed in kW as listed in the specification tables.

Overload capability

Index that indicates how much overload conditions the inverter can tolerate. It is expressed in a combination of the output current level (%) and the period, assuming the rated current as 100%. For instance, it is 150% for 1 minute in HD mode, and 120% for 1 minute in LD mode.

Overload current rating

The overload current that the inverter can tolerate, expressed in percentage of the rated output current level and its permissible period.

Overload prevention control

A function that detects inverter's heat sink overheat or overload and lowers the output frequency before the inverter trips, thus preventing the protective function from being activated. Useful for equipment such as pumps in which a decrease in the output frequency leads to a decrease in the load.

Related function codes: H70

PLC signal power (Terminal [PLC])

Name of an external power input terminal that connects to a PLC (programmable logic controller) output signal power supply. Also used to supply power to the load connected to the transistor output terminals.

Positioning control

Positioning control under which the inverter detects the rotational amount of the encoder to control that of the motor shaft. Under the speed control, the inverter controls the rotational speed of the motor shaft using the speed sensor.

The "Positioning control," implies the traveling distance of machinery (load) driven by the motor.

Pulse train input

Pulse train input that the inverter can use as a frequency command or speed command. It is a digital signal, enabling control with less thermal drift.

Related function codes: d59, d62 and d63

Rated capacity

The rating of an inverter output capacity, or the apparent power obtained by multiplying the rated output voltage by the rated output current.

Rated output current

An RMS current that flows through the inverter's output terminals under the rated output conditions (that is, when the output voltage, current, frequency and load factor meet the rated conditions).

The 200 V class series of inverters is designed so that the rated output current is higher than that of a 200 V, 6-pole motor; the 400 V class series is designed so that it is higher than that of a 380 V, 50 Hz, 4-pole motor.

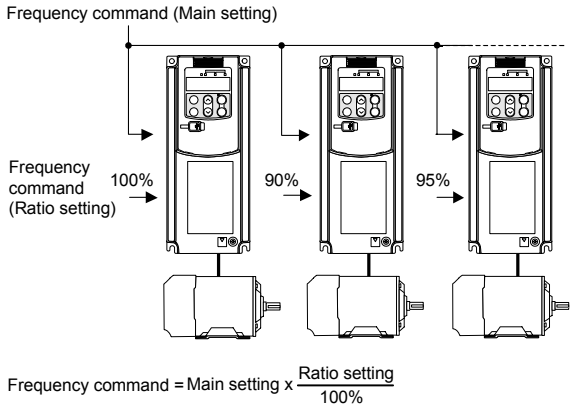
Rated output voltage

An RMS voltage of a fundamental wave that is generated across the inverter's output terminals when the output frequency is equal to the base frequency.

Ratio operation

Ratio operation in which two or more inverters share a same frequency command (main setting) and an individual inverter multiplies the given frequency command by the ratio (%) specified by one of the analog input terminal extended functions so that individual inverters run at different output frequencies.

Related function codes: E61 to E63



Required power supply capacity

The capacity required of a power supply for an inverter. This is calculated by solving either of the following equations and is stated in kVA.

Required power supply capacity (kVA)

$= \sqrt{3} \times 200 \times$ Input RMS current (200 V, 50 Hz)

Required power supply capacity (kVA)

$= \sqrt{3} \times 400 \times$ Input RMS current (400 V, 50 Hz)

Servo-lock

Holding the current position of the motor shaft at the stopped state in servo system under vector control with speed sensor, even if any external force is applied to the motor shaft.

Simultaneous keying

To simultaneously press two keys on the keypad, which is required for enabling some special keypad operations.

SINK or SOURCE

To switch the digital input modes between SINK and SOURCE with the hardware switch.

SINK mode, in which short-circuiting a digital input terminal with the common [CM] terminal transmits an input signal.

SOURCE mode, in which externally applying voltage signal (24 VDC) to a digital input terminal transmits an input signal.

Slip compensation

To compensate for decrease in motor rotation that is caused by slip of an induction motor, by increasing the inverter's output frequency in proportion to the increase of load torque.

Related function codes: P12

Speed control

Motor drive control that applies to a motor equipped with a speed sensor. The inverter controls the motor speed based on the actual speed detected by the speed sensor mounted on the motor shaft. (Ordinarily, an inverter controls the motor speed at a frequency.)

Related function codes: d01 to d04

Speed control accuracy

An index to show the stability of the motor shaft rotational speed relative to a given speed command under speed control. It is expressed in percentage (%) of the maximum frequency or the rated rotational speed (base speed) of the motor.

Speed control range

An index to show the controllable speed range relative to the rated motor speed (base speed). It is expressed by a ratio, for example, 1:1500 that means the inverter is able to control the motor speed to 1/1500 of the rated speed.

Speed response

A performance index in speed control, which shows how many times the inverter can change the motor shaft rotational speed with commands in one second. If this index is 100 Hz, for instance, it means that the inverter can respond to up to 100 speed commands per second.

Standard motor

Fuji standard motors (8-, 6- and 9-series) which the inverter can drive by just configuring function code P99, A39, b39 and r39.

Starting frequency

The initial frequency at which an inverter starts raising its output frequency.

Related function codes: F23, A12, b12 and r12

Starting torque

Torque that a motor produces when it starts rotating (or the drive torque with which the motor can run a load).

Stop frequency

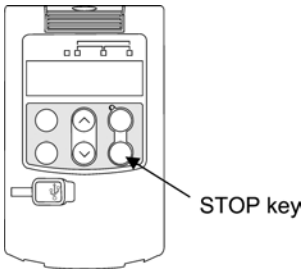
The output frequency at which an inverter stops its output in decelerate-to-stop operation.

Related function codes: F25

STOP key priority

Giving priority to the STOP key on the keypad, which always enables the STOP key during inverter running.

The STOP key priority can be enabled by function code H96 even if the STOP key is disabled by function code F02 or H30.



Switch to commercial power (*SW50*/*SW60*)

To switch the power source for three-phase induction motors between the inverter output and commercial power line. The switching sequence is integrated in the inverter.

Related function codes: E01

Thermal time constant

The time needed to activate the electronic thermal overload protection when the preset level of motor current continuously has flowed.

Related function codes: F12, A08, b08 and r08

Thermistor

A kind of thermal sensors, which is classified into two types: PTC (Positive Temperature Coefficient) thermistors and NTC (Negative Temperature Coefficient) thermistors. As the temperature rises, the internal resistance of the PTC thermistors increases, and that of the NTC thermistors decreases.

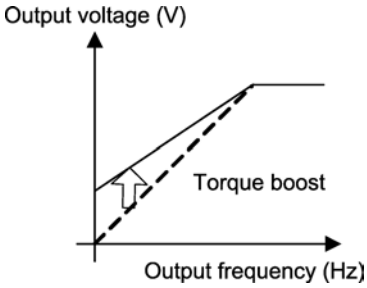
Some regenerative braking resistors, cooling fans and motors have a built-in thermistor.

Torque boost

The compensation process for a voltage drop in a low frequency region when an inverter drives a three-phase induction motor.

In a low frequency range, a voltage drop reduces the motor output torque. To compensate for the decrease, this process raises the output voltage.

Related function codes: F09, A05, b05 and r05



Torque control

Controlling the motor output torque in vector control with speed sensor using the option card, in proportion to the analog input given at terminal [12]. It does not control the speed and amount of the motor rotation.

Transistor output

A solid-state digital output (signals), unlike a mechanical contact output such as a relay contact output. These signals output via terminals [Y1] to [Y4] and the reference potential terminal [CMY]. Function codes E20 to E23 assign functions to those terminals.

Trip

An inverter's output shutdown state in which an inverter goes when the protective function is activated due to an overvoltage, overcurrent, or any other unusual event. The inverter cannot run until the trip state is reset. The trip factor is displayed on the keypad.

Universal DI

To relay a digital signal sent from the peripheral equipment to the upper controller (e.g., PLC) using any of the input terminals (if free) on the inverter. The universal DI signal is independent of the inverter operation.

Related function codes: E01 to E09, E98 and E99

Universal DO

To relay a digital command signal sent the upper controller (e.g., PLC) to the peripheral equipment using any of the output terminals (if free) on the inverter. The universal DO signal is independent of the inverter operation.

Related function codes: E20 to E27

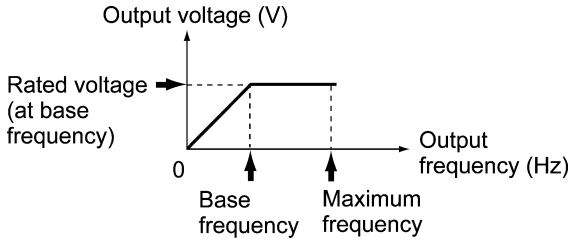
Variable torque load

A load whose torque varies in proportion to the square of the motor shaft rotational speed. Fans and pumps are typical variable torque loads. Using a suitable inverter for them yields energy-saving effect.

V/f characteristics

Characteristics of an inverter output, frequency "f" versus voltage "V." The graph below plots the output frequency along the abscissa, and the output voltage along the ordinate.

Related function codes: F04, F05, A02, A03, b02, b03, r02 and r03



V/f control

The rotational speed of a three-phase induction motor is calculated by the expression given below. A general-purpose inverter controls the motor speed by varying its output frequency (f).

In proportion to the output frequency (f), the V/f control varies the output voltage (V). Select the V/f control to drive more than one motor with a single inverter.

$$N = \frac{120 \times f}{p} \times (1 - s)$$

where,

N: Motor speed (r/min)
f: Output frequency (Hz)
p: Number of poles
s: Slip frequency

Vector control without speed sensor

Introduced in response to a strong demand from the market for a control mode using no speed sensor (PG: pulse generator) in environments where it is difficult to structurally mount a PG near the motor shaft or to suppress inductive noises on the PG signal wiring.

This control provides lower response and accuracy than the control with speed sensor.

Vector control with speed sensor

A high-performance, high-response control mode, in which an inverter processes motor data such as the actual motor speed and motor shaft rotational angle detected by the speed sensor (PG: pulse generator) for optimally controlling the motor rotor flux.

To achieve an optimal control performance, this control mode is usually selected when the inverter drives motors exclusively designed for vector control with the rated voltage of 180 VAC (360 VAC).

Vector motor

A generic term for motors applicable to the vector control. Fuji MVK motors driven by the FRENIC5000VG7 series of inverters are available.

High Performance, Multifunction Inverter

FRENIC-MEGA

User's Manual

First Edition, June 2007
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Fuji Electric FA Components & Systems Co., Ltd.

The purpose of this manual is to provide accurate information in the handling, setting up and operating of the FRENIC-MEGA series of inverters. Please feel free to send your comments regarding any errors or omissions you may have found, or any suggestions you may have for generally improving the manual.

In no event will Fuji Electric FA Components & Systems Co., Ltd. be liable for any direct or indirect damages resulting from the application of the information in this manual.